



Canon

AE-1

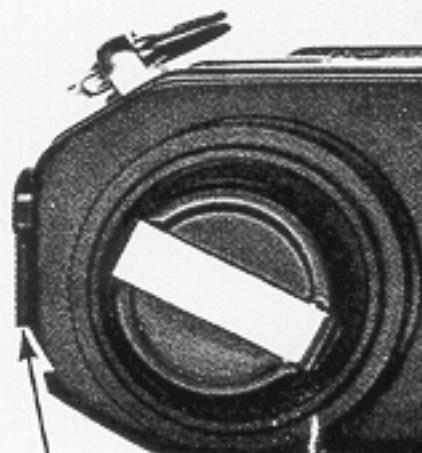


GREEN CIRCLE FOR AUTOMATIC-DIAPHRAGM CONTROL

DIAPHRAGM-SETTING RING

LED (LIGHT-EMITTING DIODE)

FLASHES DURING SLOW EXPOSURES AND WHEN YOU DEPRESS BATTERY-TEST BUTTON ON BOTTOM OF CAMERA



NEEDLE-HOLD
BUTTON

SYNC-TERMINAL
COVER

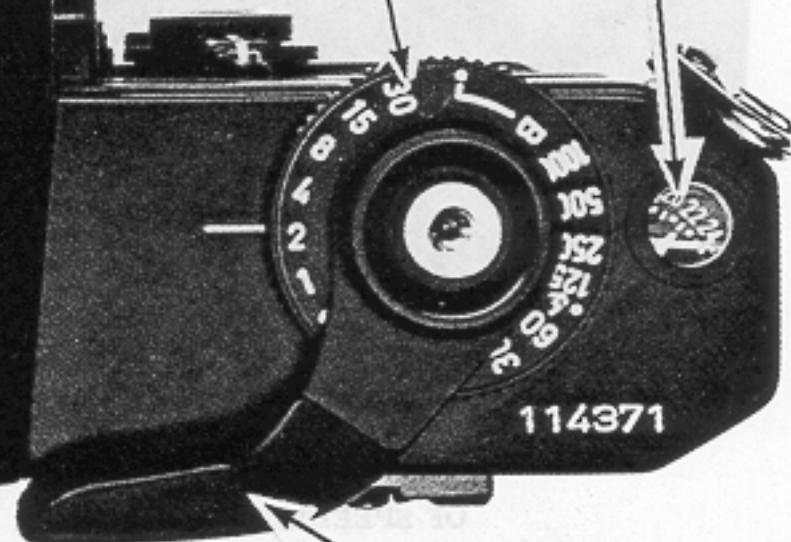


DIAPHRAGM-SETTING-RING
LOCK BUTTON--DEPRESS TO
SELECT AUTOMATIC SETTING

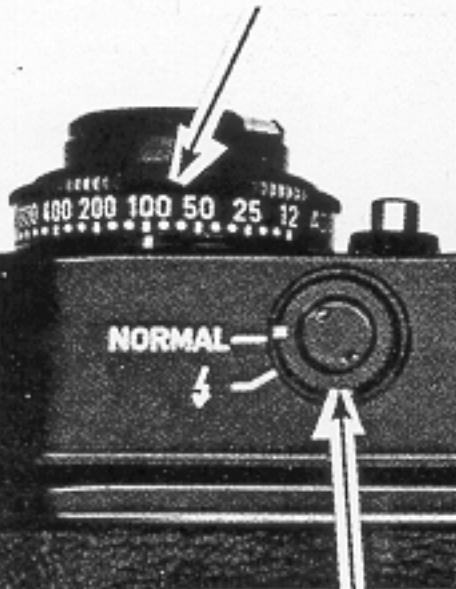
SHUTTER-SPEED DIAL

COUNTER WINDOW

WIND LEVER IN
"STORAGE" POSITION

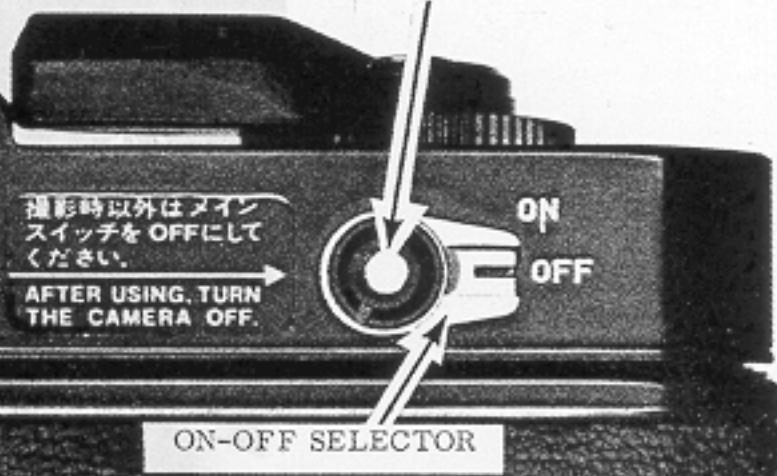


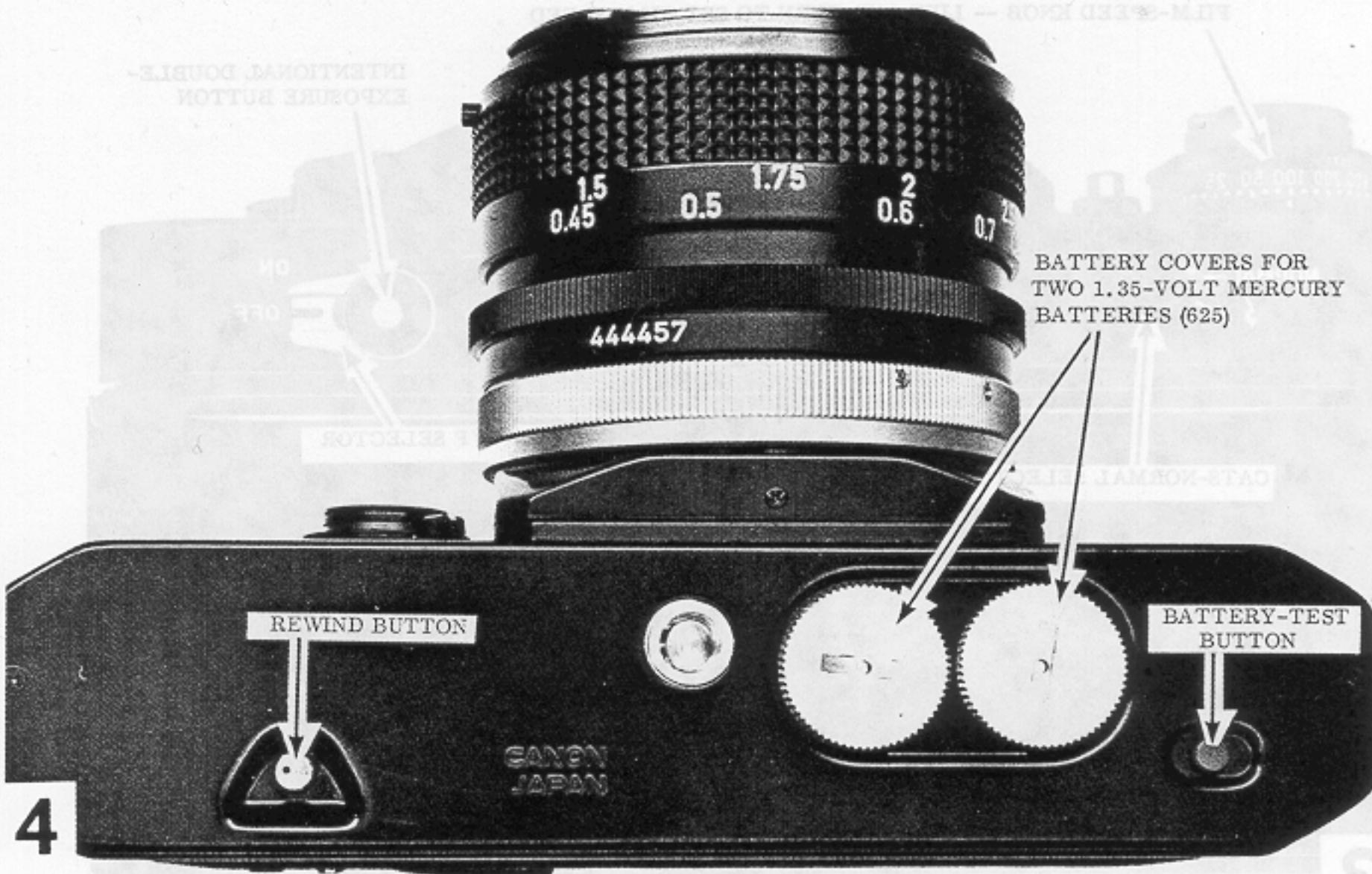
FILM-SPEED KNOB -- LIFT AND TURN TO SET FILM SPEED



CATS-NORMAL SELECTOR

INTENTIONAL DOUBLE-EXPOSURE BUTTON





INTENTIONAL DOUBLE-EXPOSURE BUTTON

BATTERY COVERS FOR
TWO 1.35-VOLT MERCURY
BATTERIES (625)

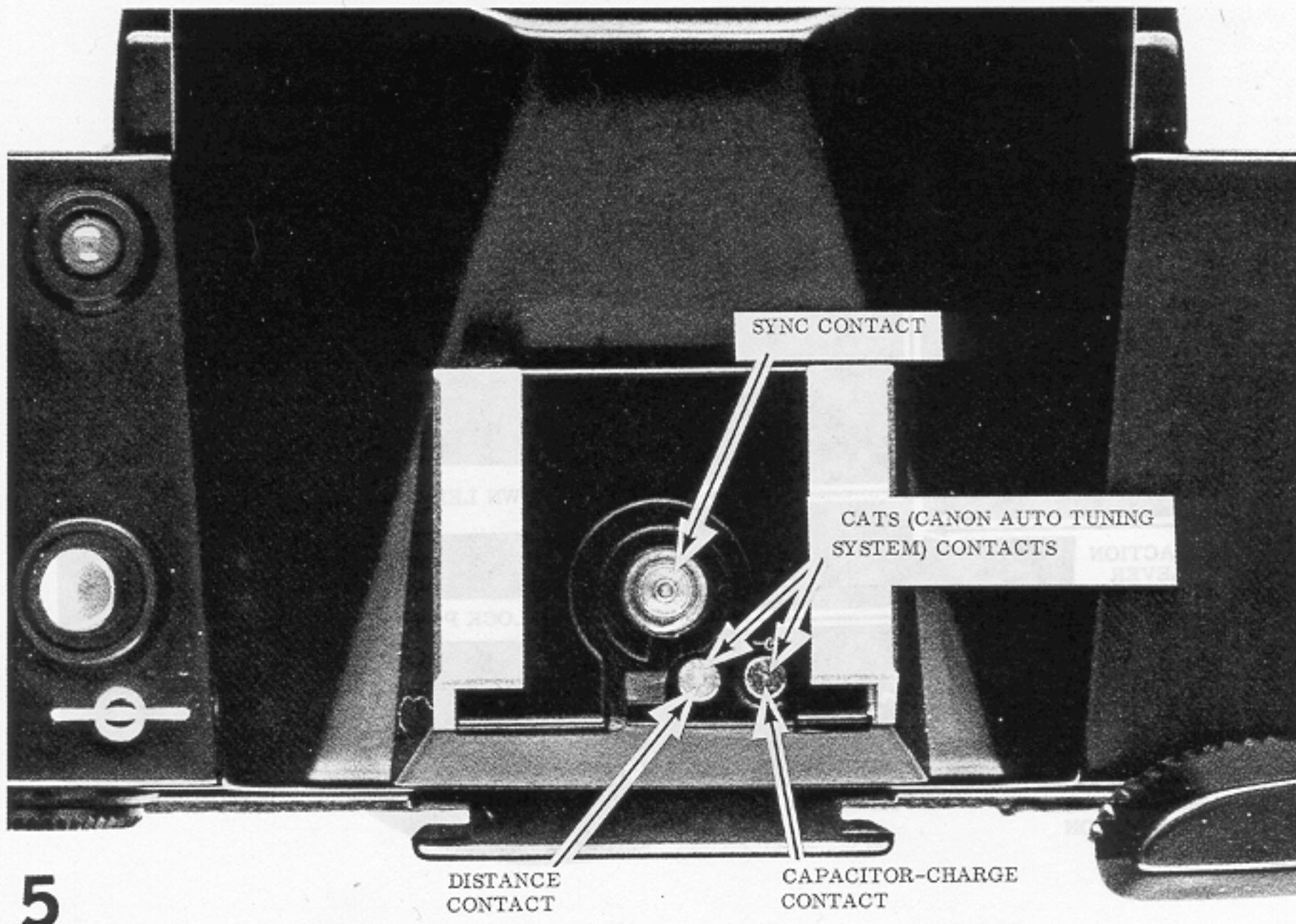
REWIND BUTTON

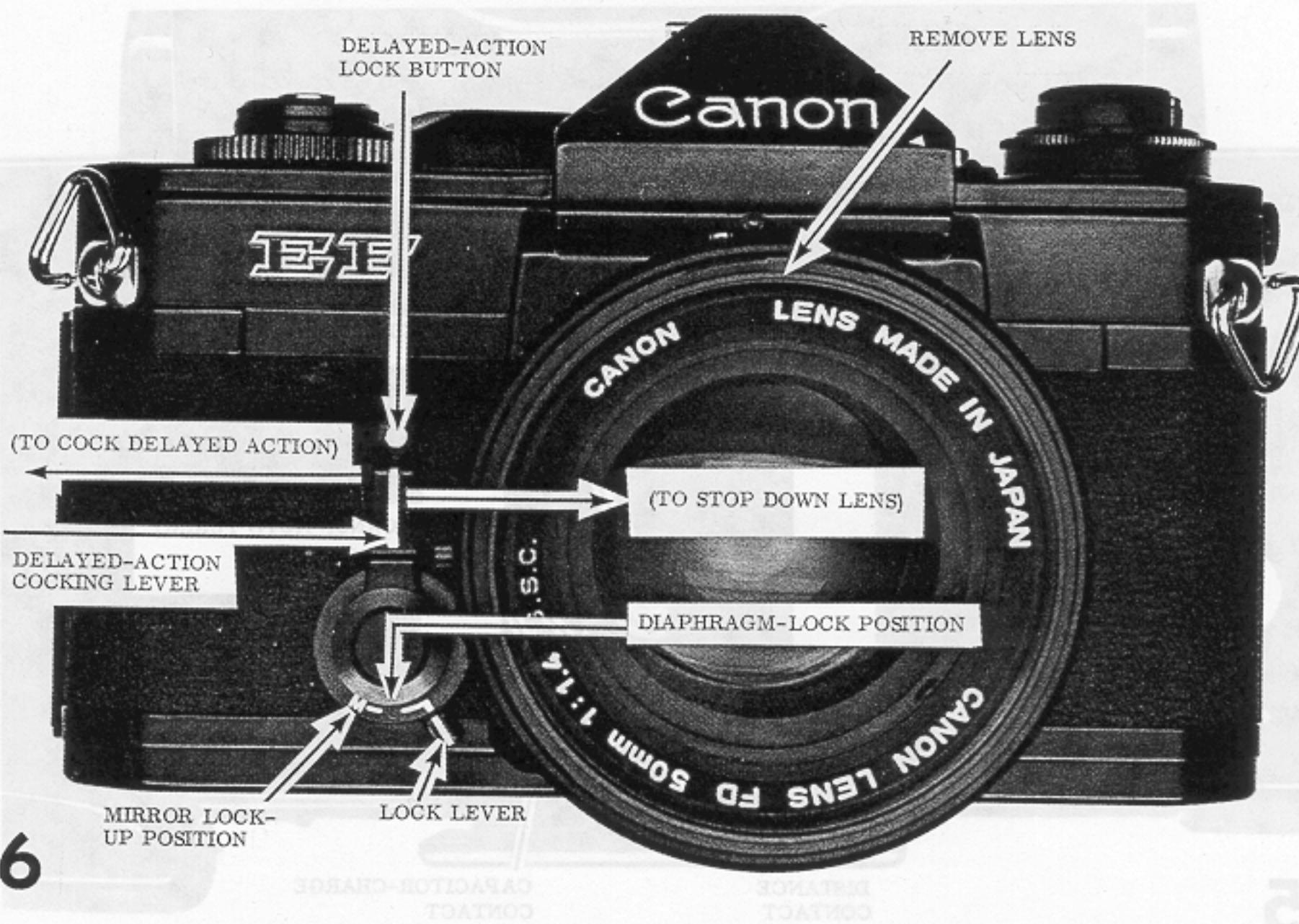
BATTERY-TEST
BUTTON

CANON
JAPAN

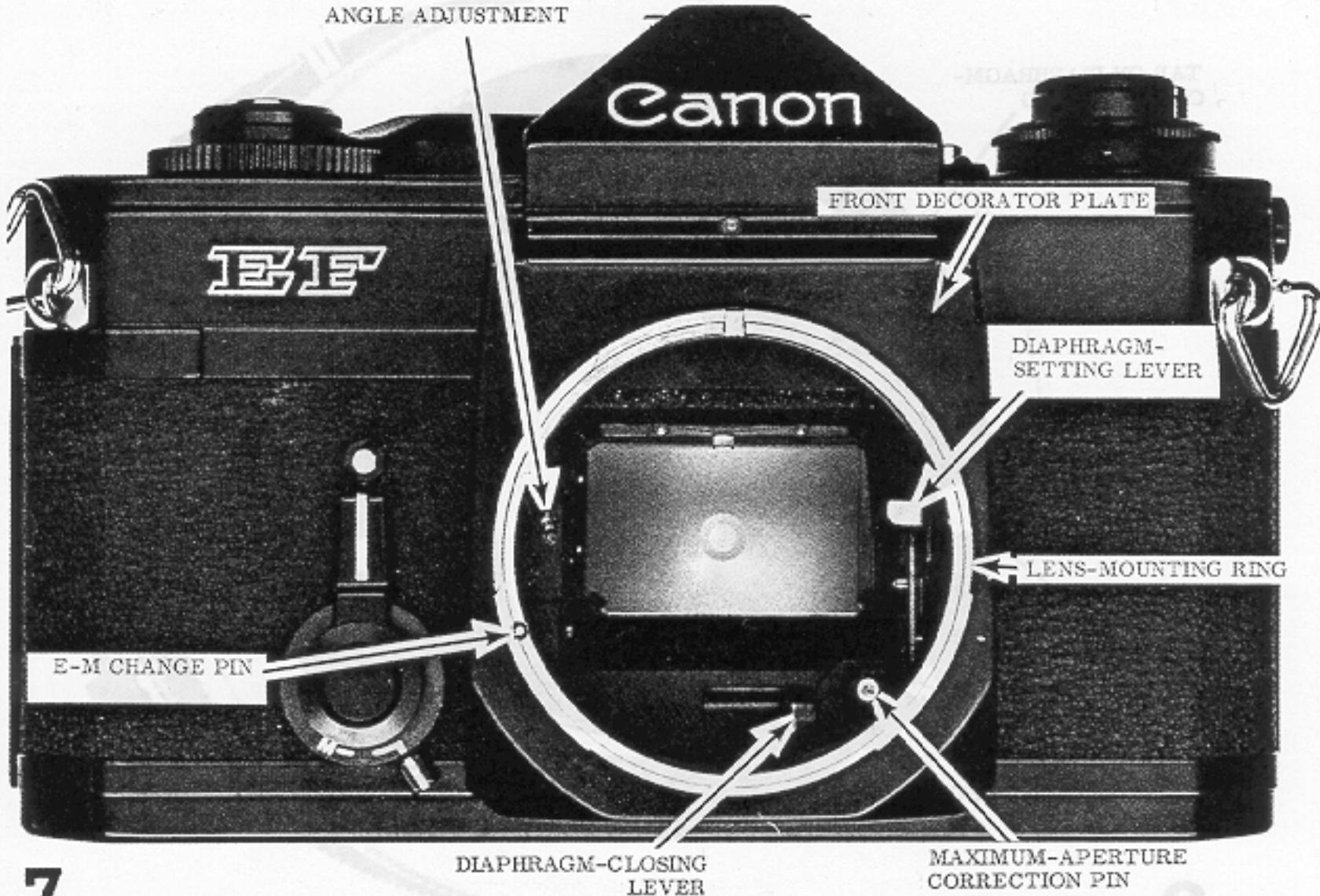
4

3





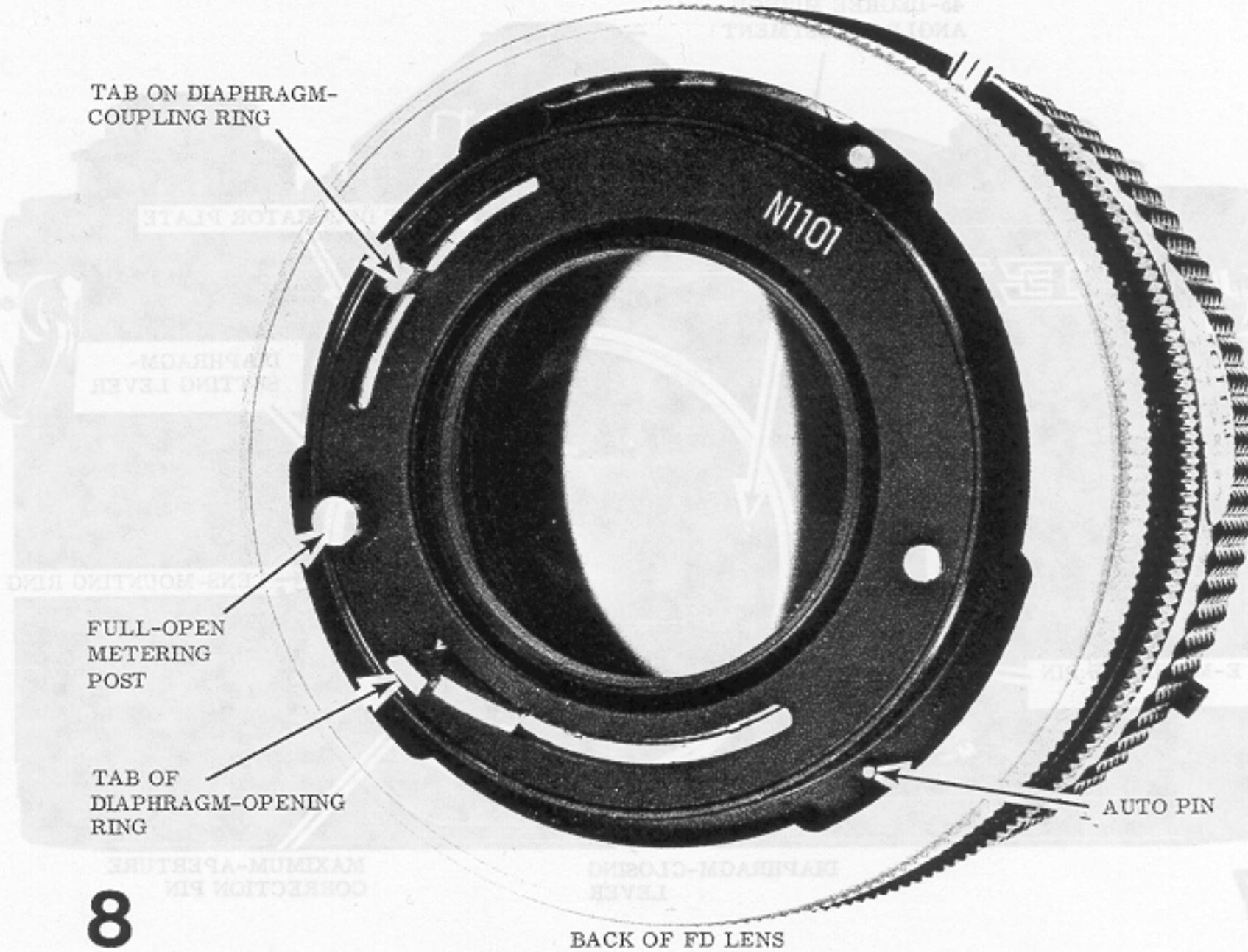
45-DEGREE MIRROR-
ANGLE ADJUSTMENT



7

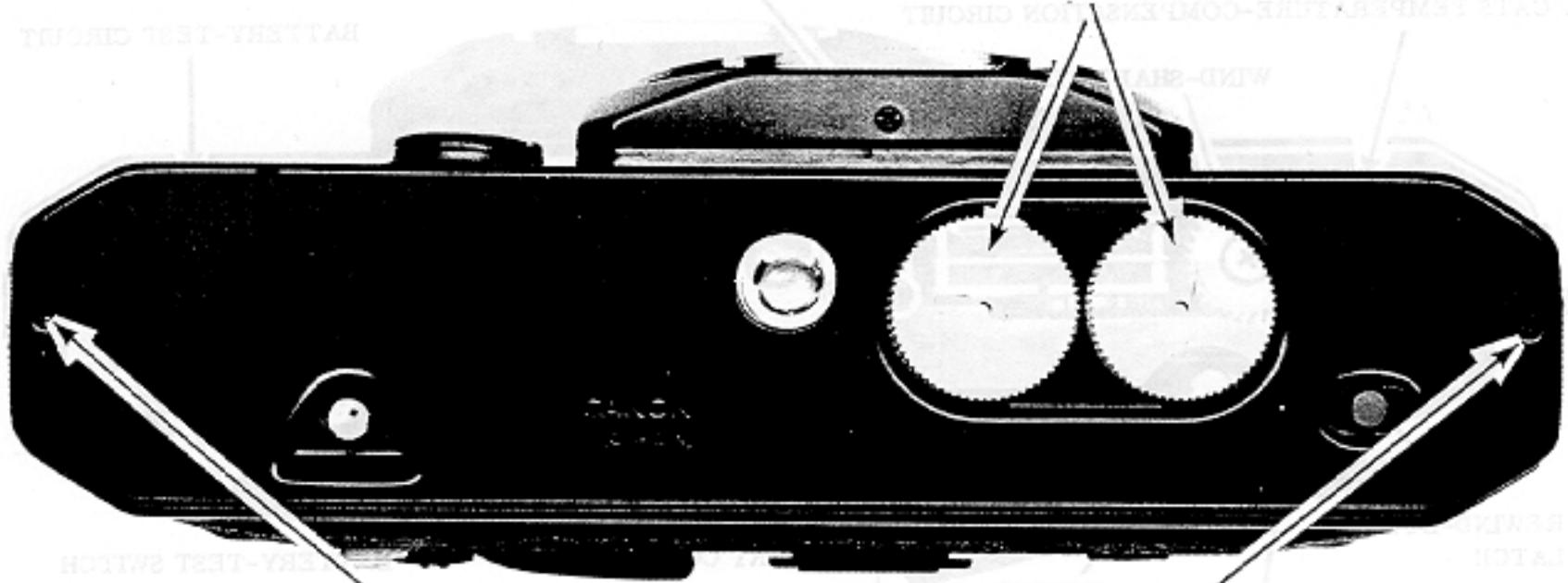
8

Check the flange-focal distance (42.14 mm) by measuring between the front surface of the lens-mounting ring and the film rails. To make an adjustment, first remove the screw at the bottom of the front decorator plate. Lift off the front decorator plate and remove the four screws holding the lens-mounting ring. You can now add or remove spacers to adjust the flange-focal distance and/or parallelism.



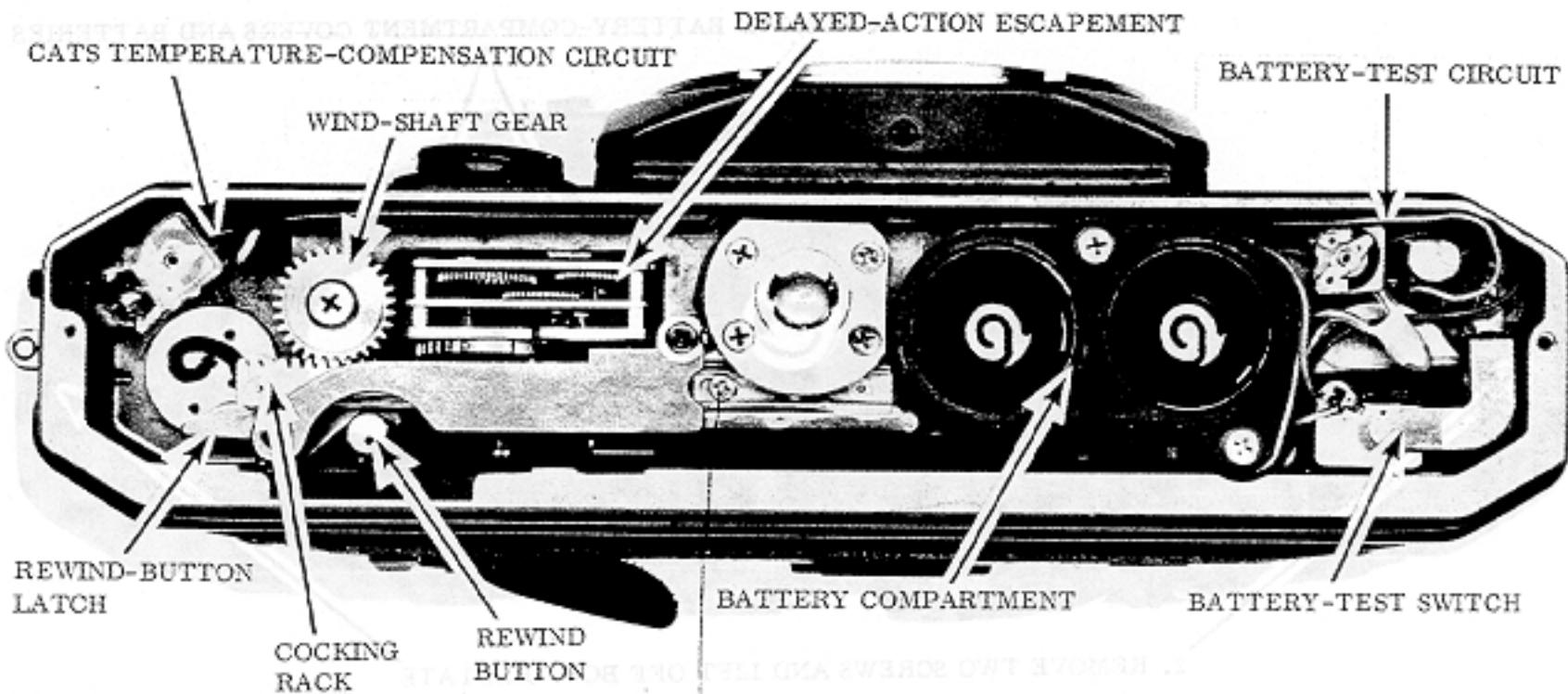
1. REMOVE BATTERY-COMPARTMENT COVERS AND BATTERIES

УДАЛИТЬ КОПЫТИЯ-БАТЕРИИ



2. REMOVE TWO SCREWS AND LIFT OFF BOTTOM PLATE

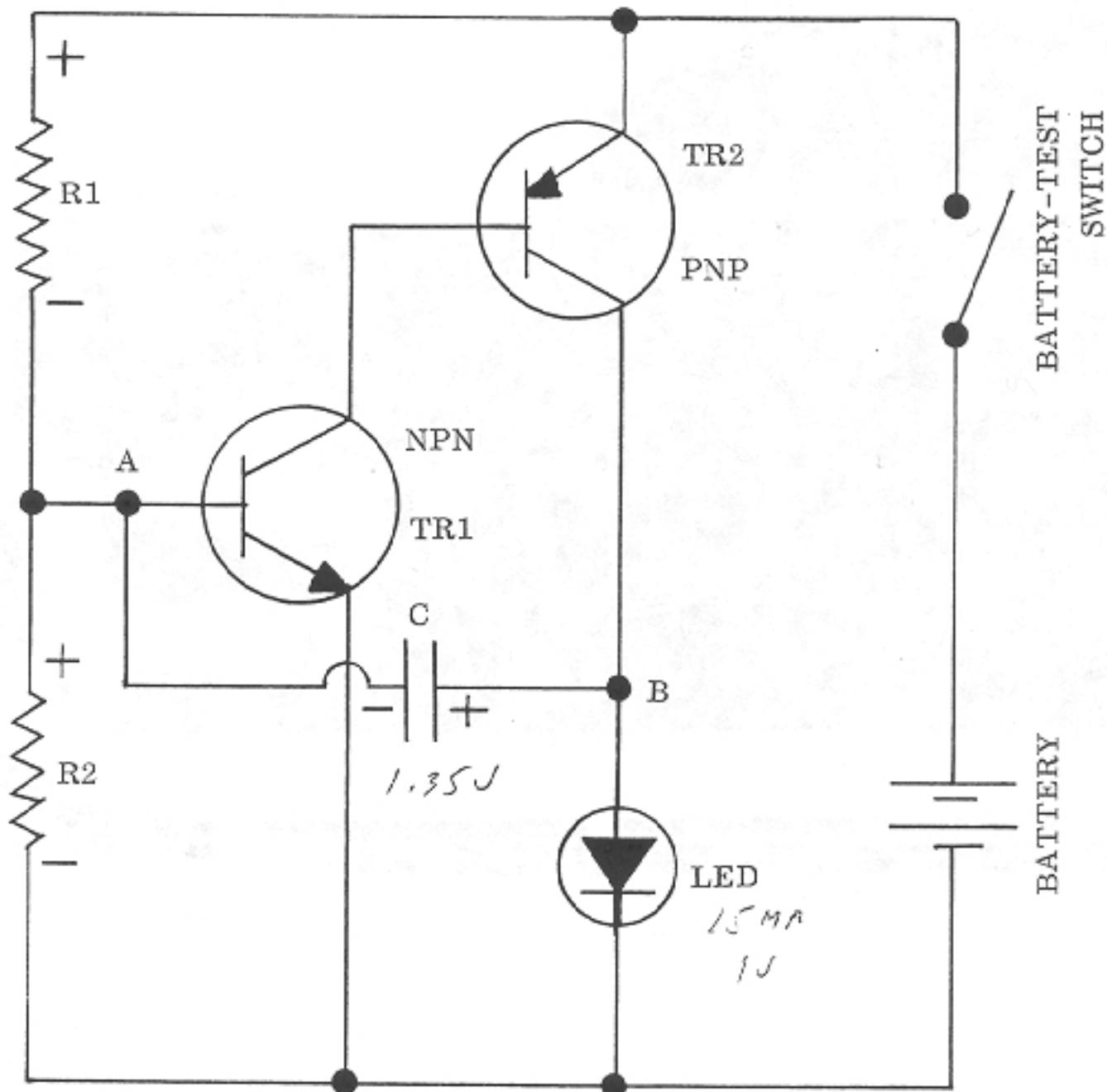
CAUTION: BATTERY-TEST BUTTON WILL BE LOOSE WHEN
YOU LIFT OFF BOTTOM PLATE



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adjustment for overtravel or undertravel
(cocking)

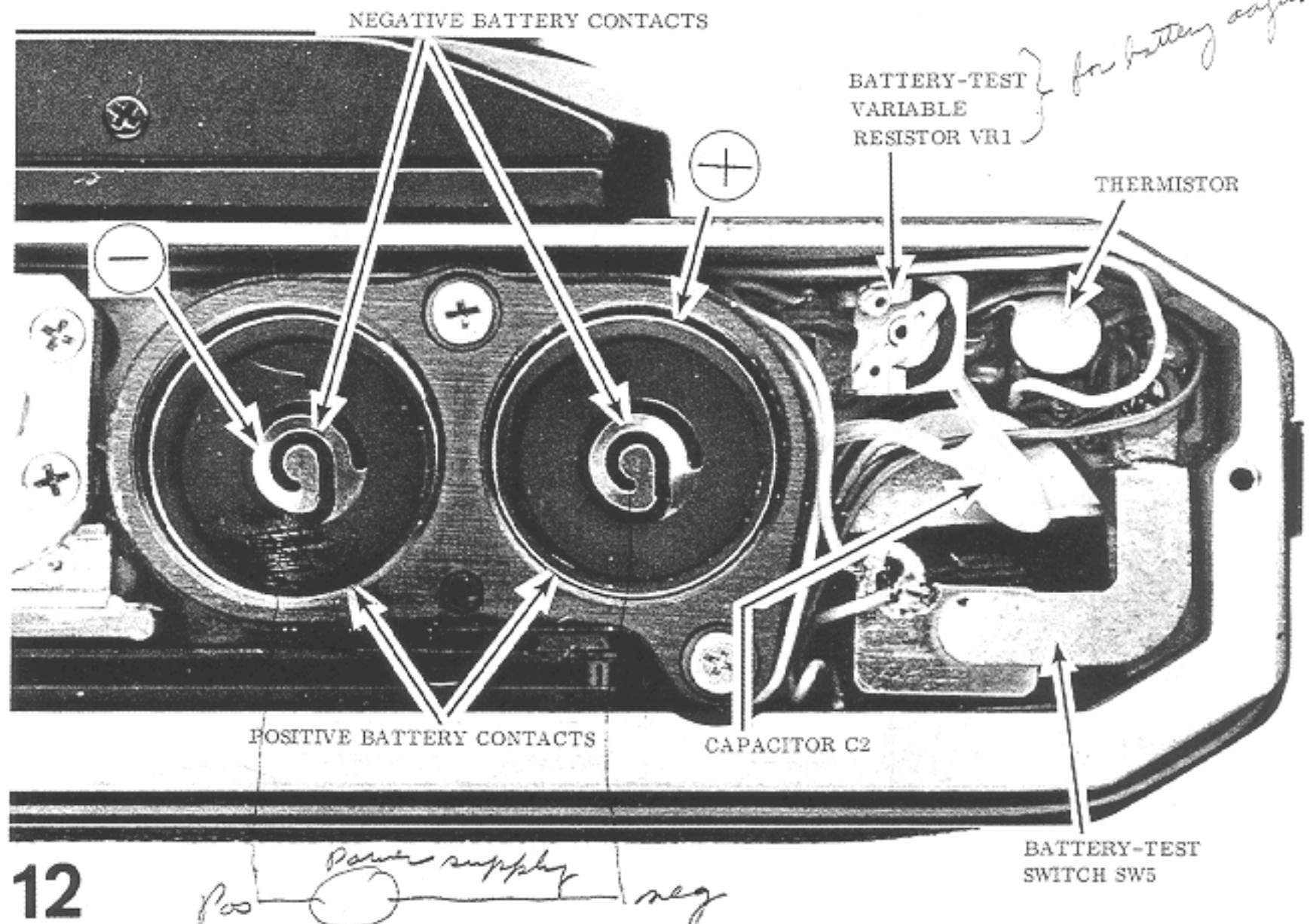
BASIC LED CIRCUIT



on-off Ratio 8:1

Current drawn - 1.9 mA

Check insulation on battery compartment



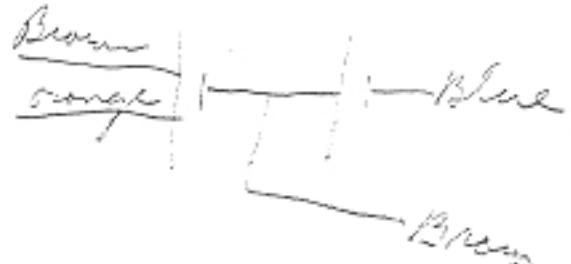
12

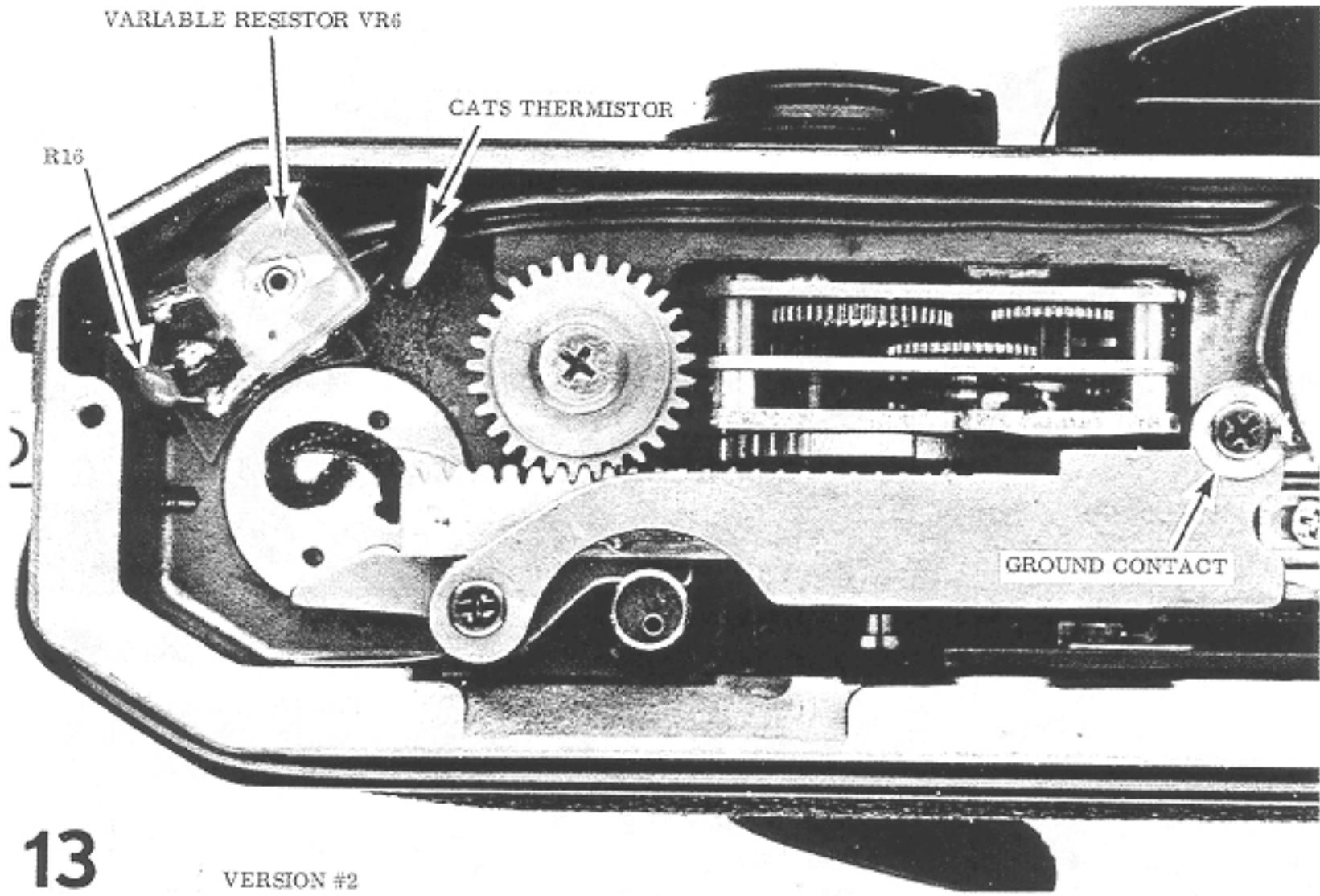
Pos Power supply neg

BATTERY-TEST SWITCH SW5

BATTERY-TEST-CIRCUIT ADJUSTMENT: Hook a DC power supply to the battery compartment as shown by the polarity indications. With the power supply set at 2.31 volts, the LED should operate when you close the battery-test switch; the LED should not operate at 2.26 volts. Make the adjustment with the battery-test variable resistor VR1.

If battery runs down fast - take off battery holder +
tape underside (maybe shorted)





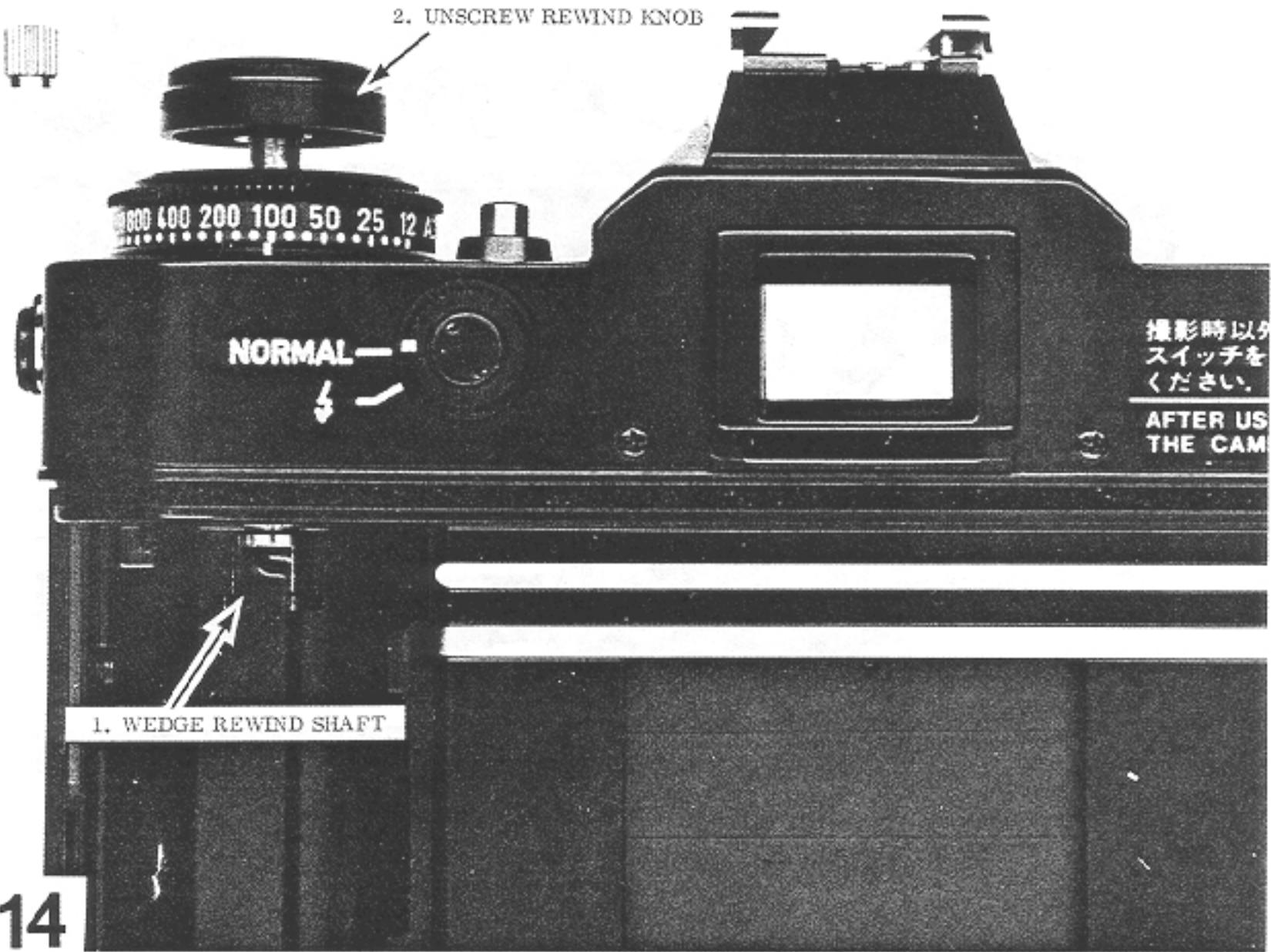
13

VERSION #2

The original Canon EF (version #1) does not have the CANTS temperature-compensation circuit. The temperature-compensation circuit was added as a modification to the model illustrated (version #2). Later models (versions #3 and #4) have the thermistor and the fixed resistor at the top of the camera; in these cameras, the only part on the circuit board shown is the variable resistor VR6.

The red wire connects resistor VR6 to ground in the model illustrated. Later models use a screw to hold the VR6 circuit board. So the screw acts as a ground connection and eliminates the need for the red wire.





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Disassembly

ASA 100

BULB

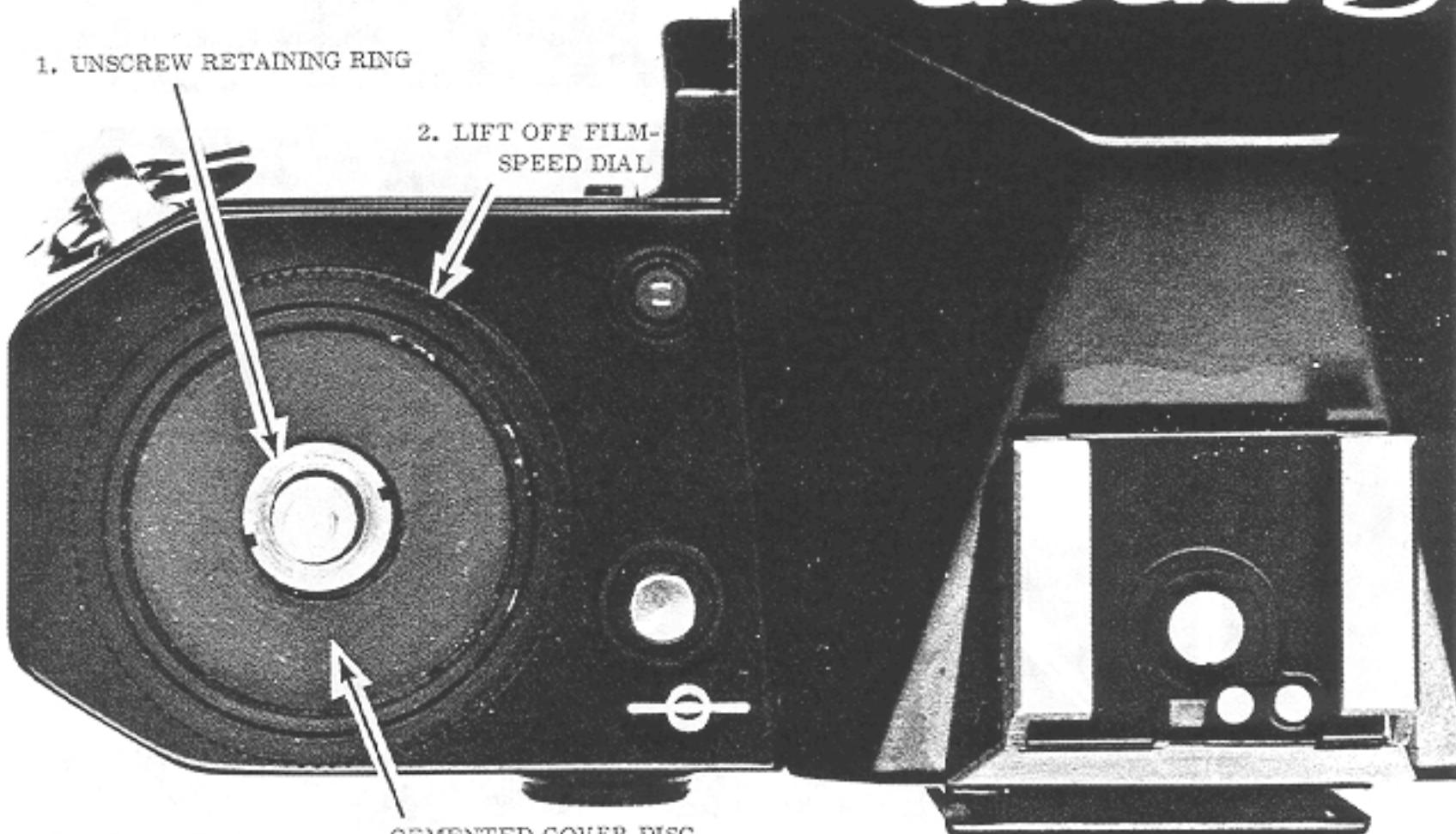
on-off selector off

canon

1. UNSCREW RETAINING RING

2. LIFT OFF FILM-SPEED DIAL

CEMENTED COVER DISC



FILM-SPEED DIAL WITH CEMENTED
COVER DISC REMOVED

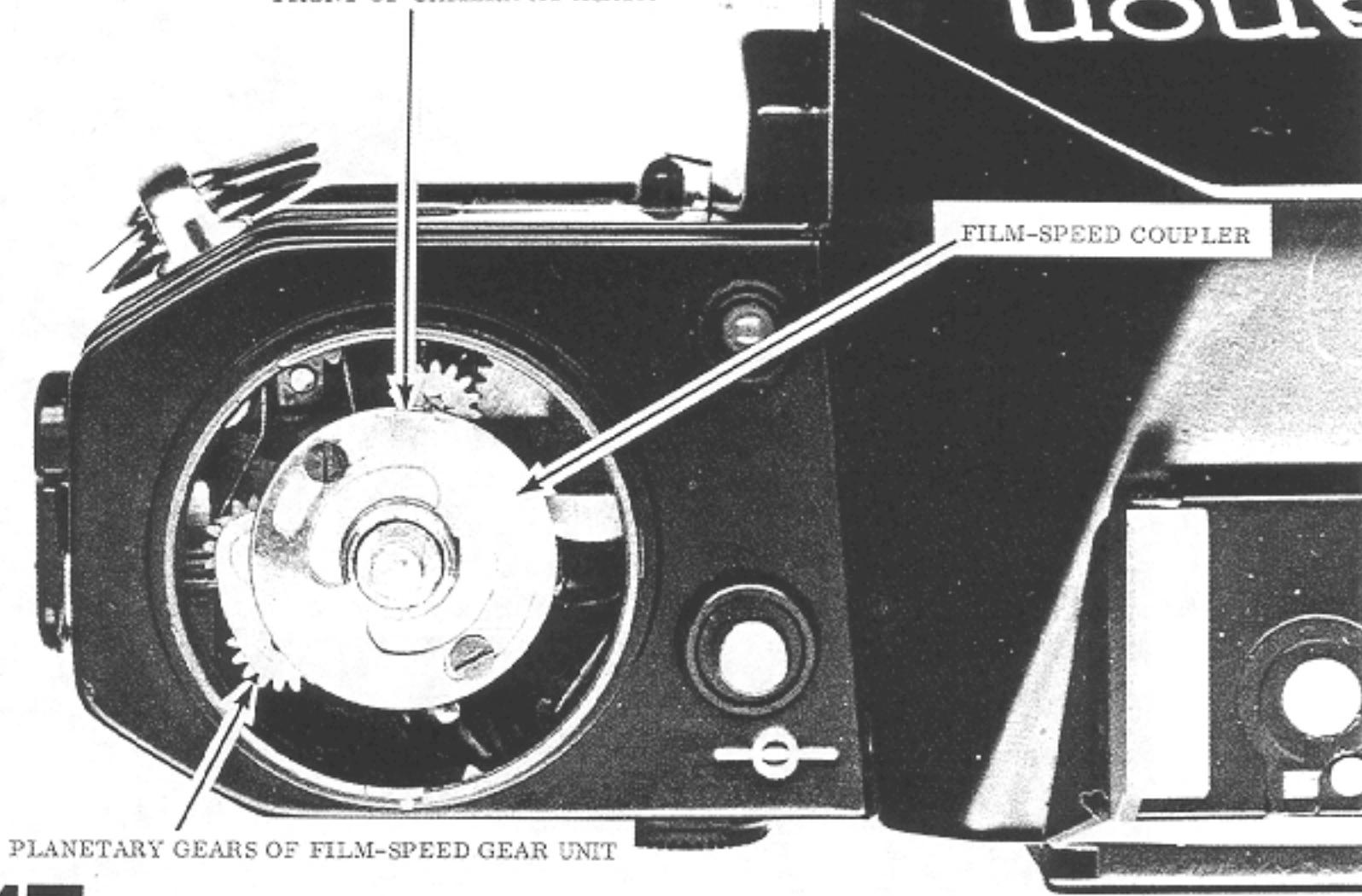
FORK ON FILM-SPEED DIAL STRADDLES TAB ON FILM-SPEED COUPLER

SCREWS FOR MINOR ADJUSTMENTS ONCE TOP COVER IS INSTALLED

TAB ON FILM-SPEED COUPLER FACES
FRONT OF CAMERA AT ASA100

uouxe

FILM-SPEED COUPLER

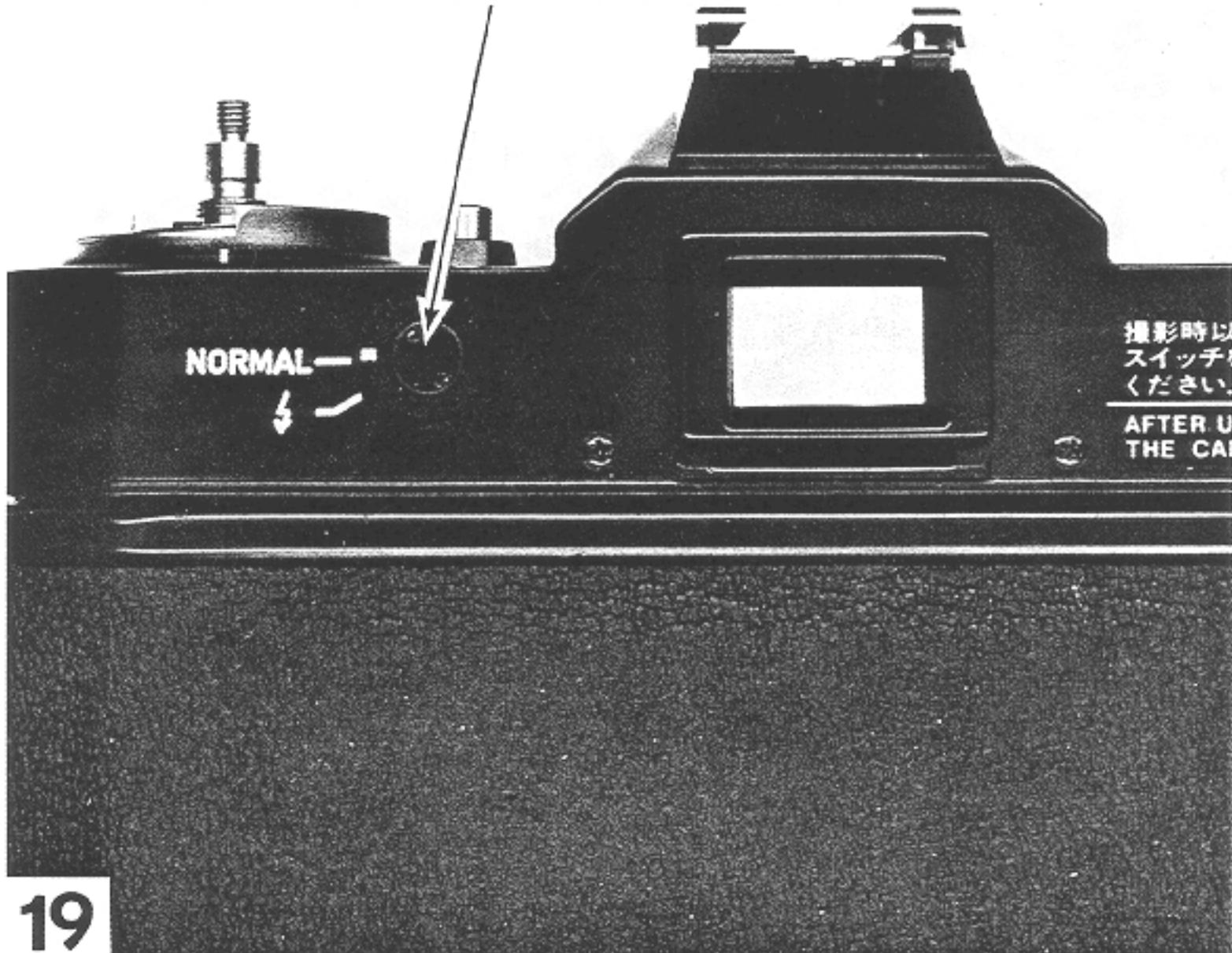


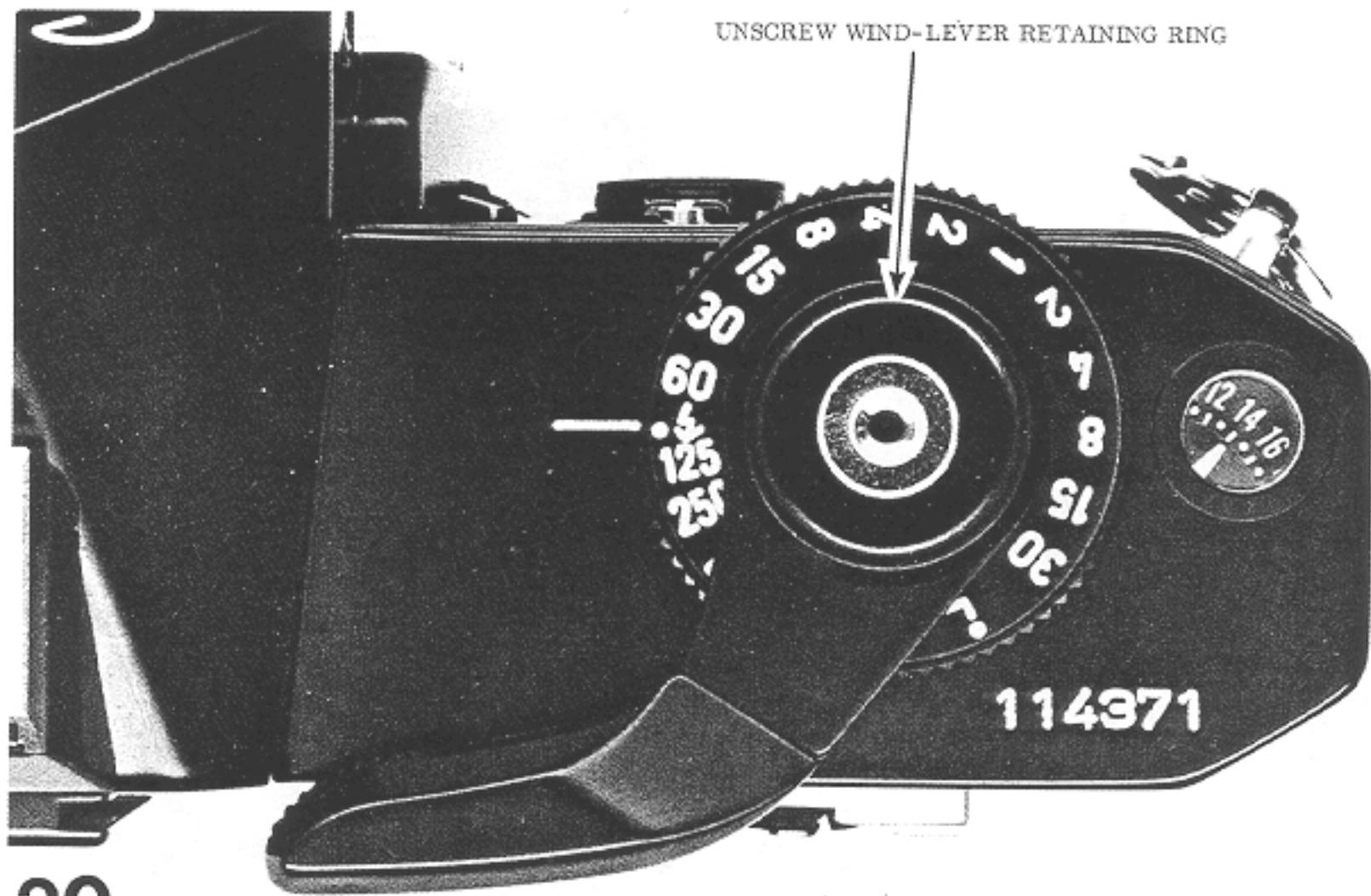
PLANETARY GEARS OF FILM-SPEED GEAR UNIT

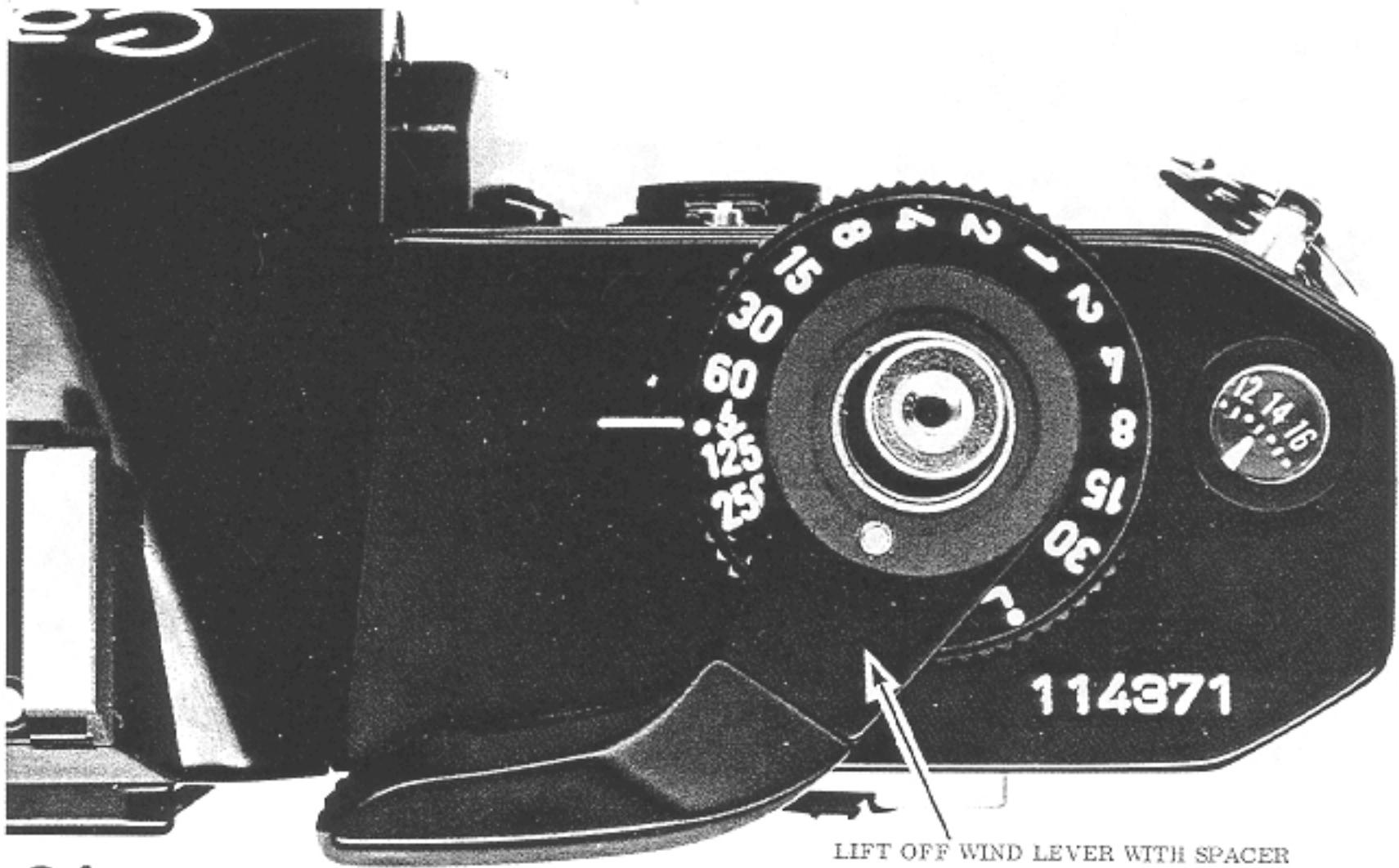
SPECIAL TOOL MAY BE SCREWED ONTO
RETAINING-RING THREADS TO HOLD
PARTS IN ASA100 POSITION



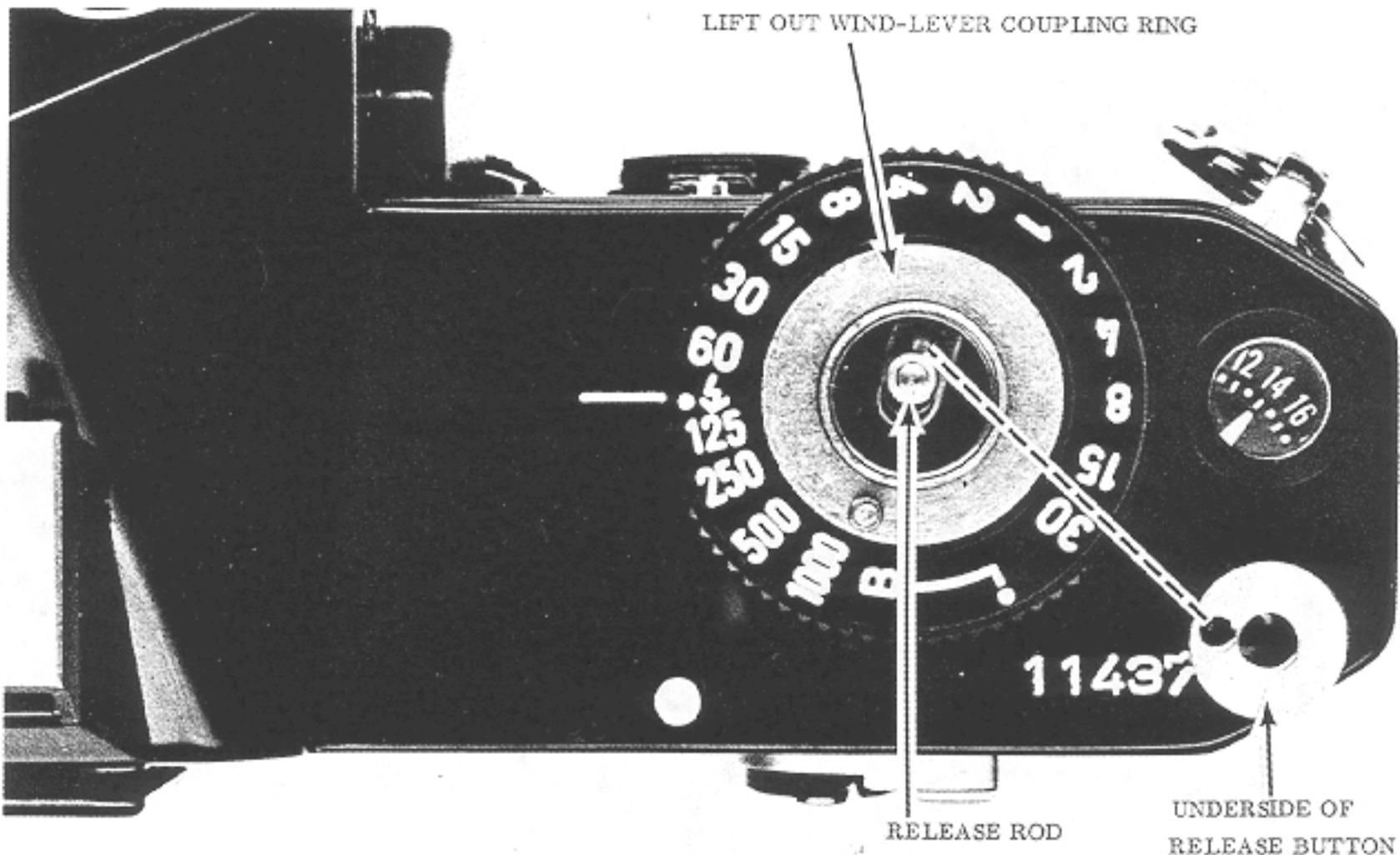
UNSCREW RETAINING SCREW AND LIFT OFF CATS-NORMAL SELECTOR







LIFT OFF WIND LEVER WITH SPACER

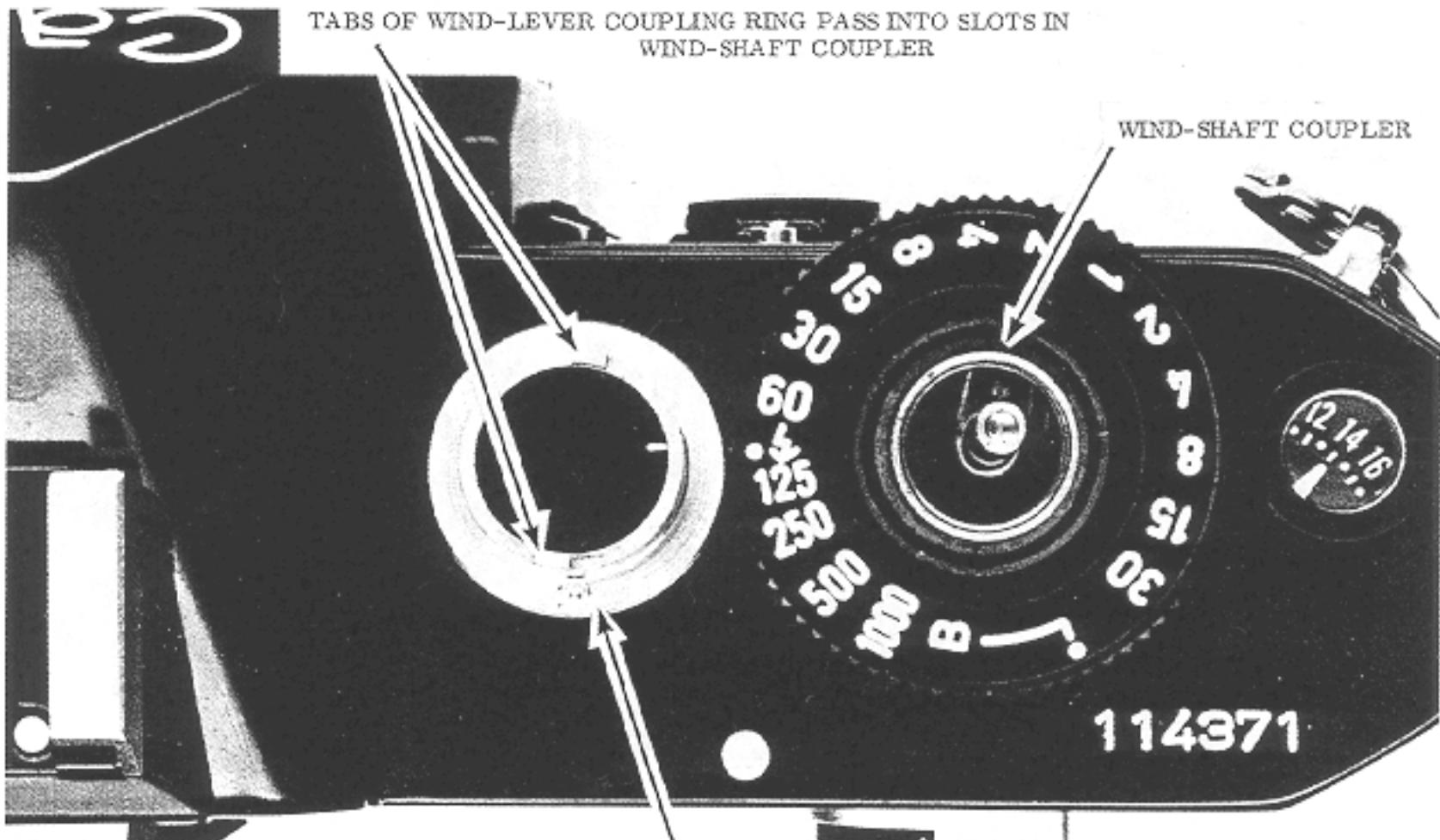


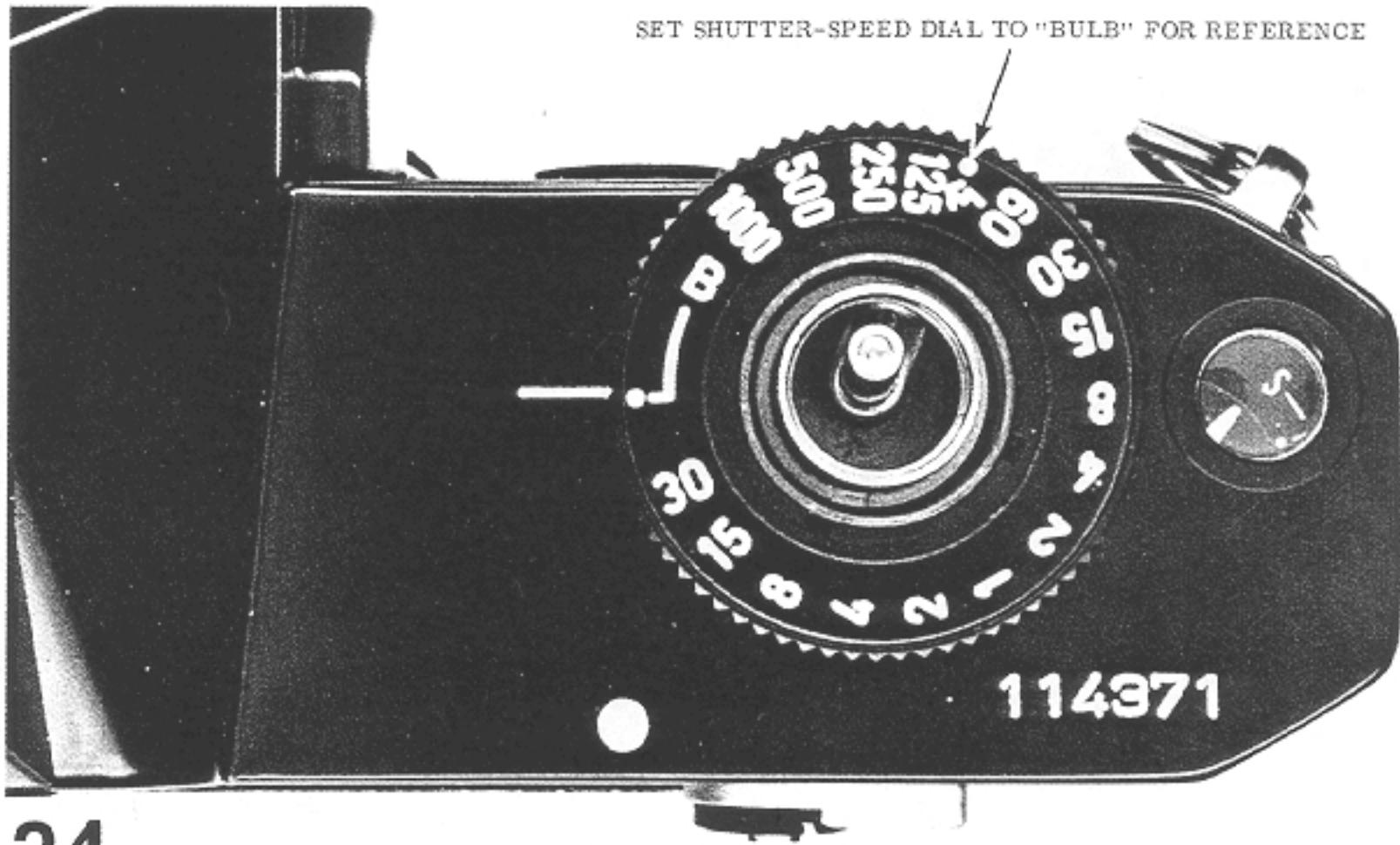
NOTE: IT'S NOT NECESSARY TO REMOVE THE
RELEASE BUTTON; IF YOU DO, NOTE THE HOLE
IN THE RELEASE BUTTON THAT FITS OVER THE
FIN ON THE RELEASE ROD

TABS OF WIND-LEVER COUPLING RING PASS INTO SLOTS IN
WIND-SHAFT COUPLER

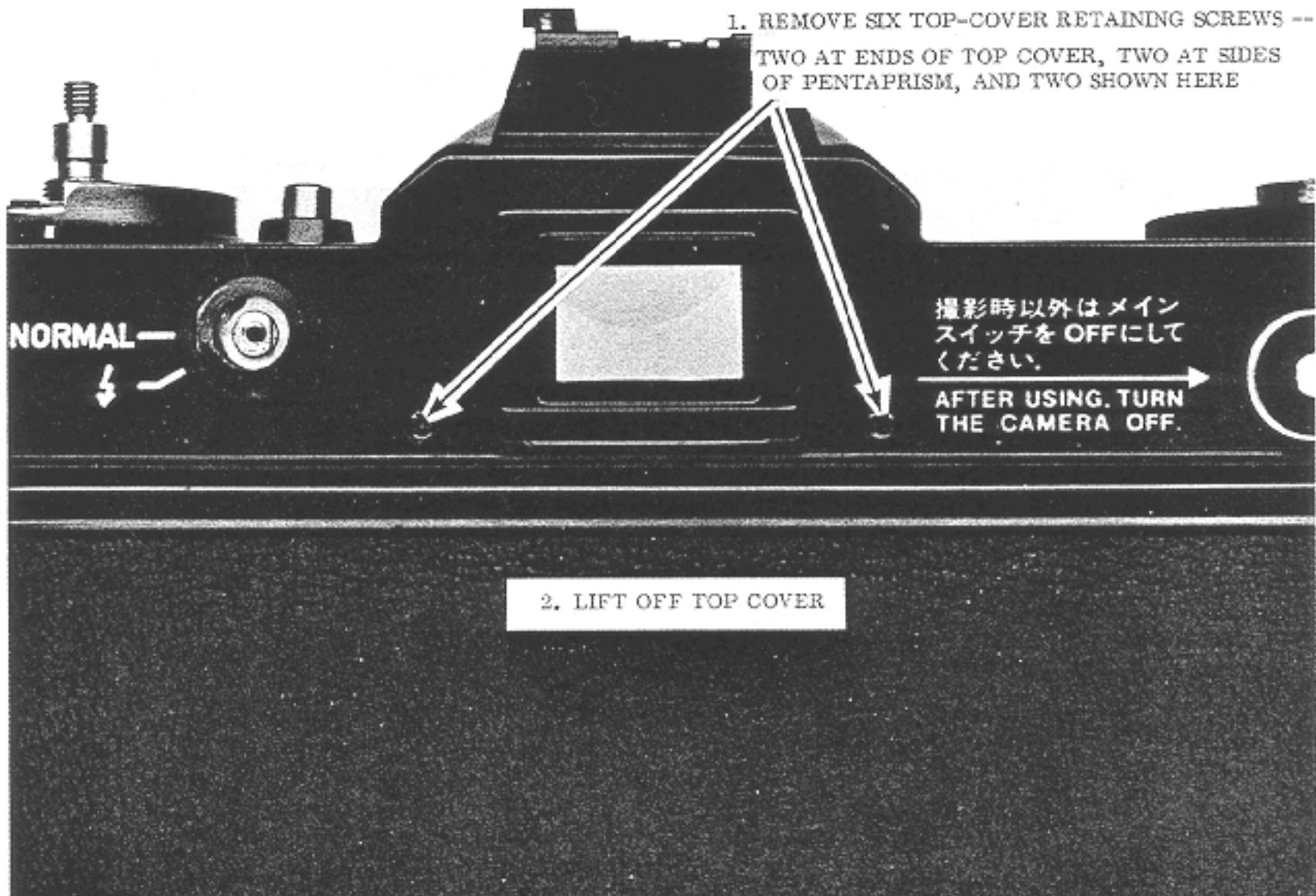
WIND-SHAFT COUPLER

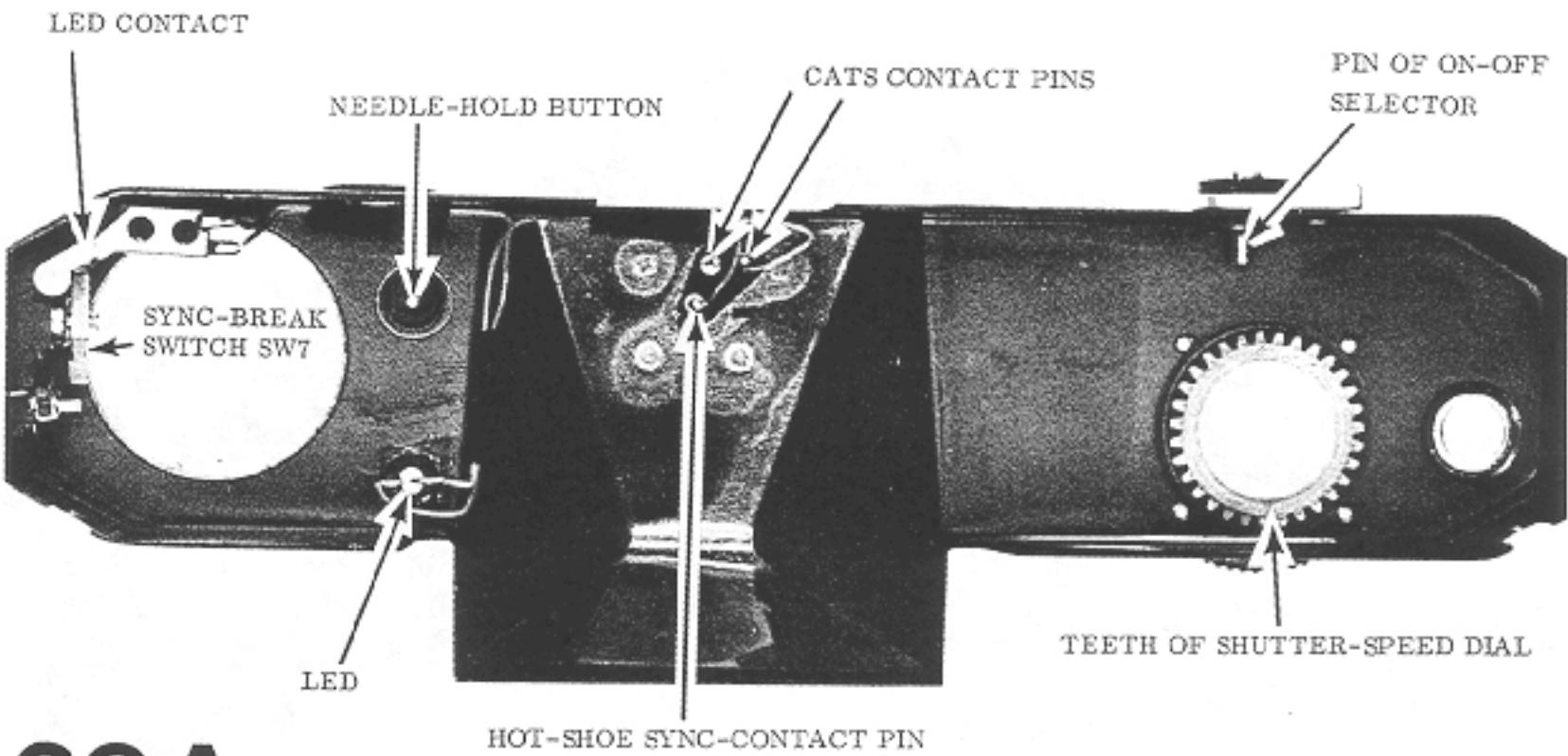
UNDERSIDE OF WIND-LEVER COUPLING RING





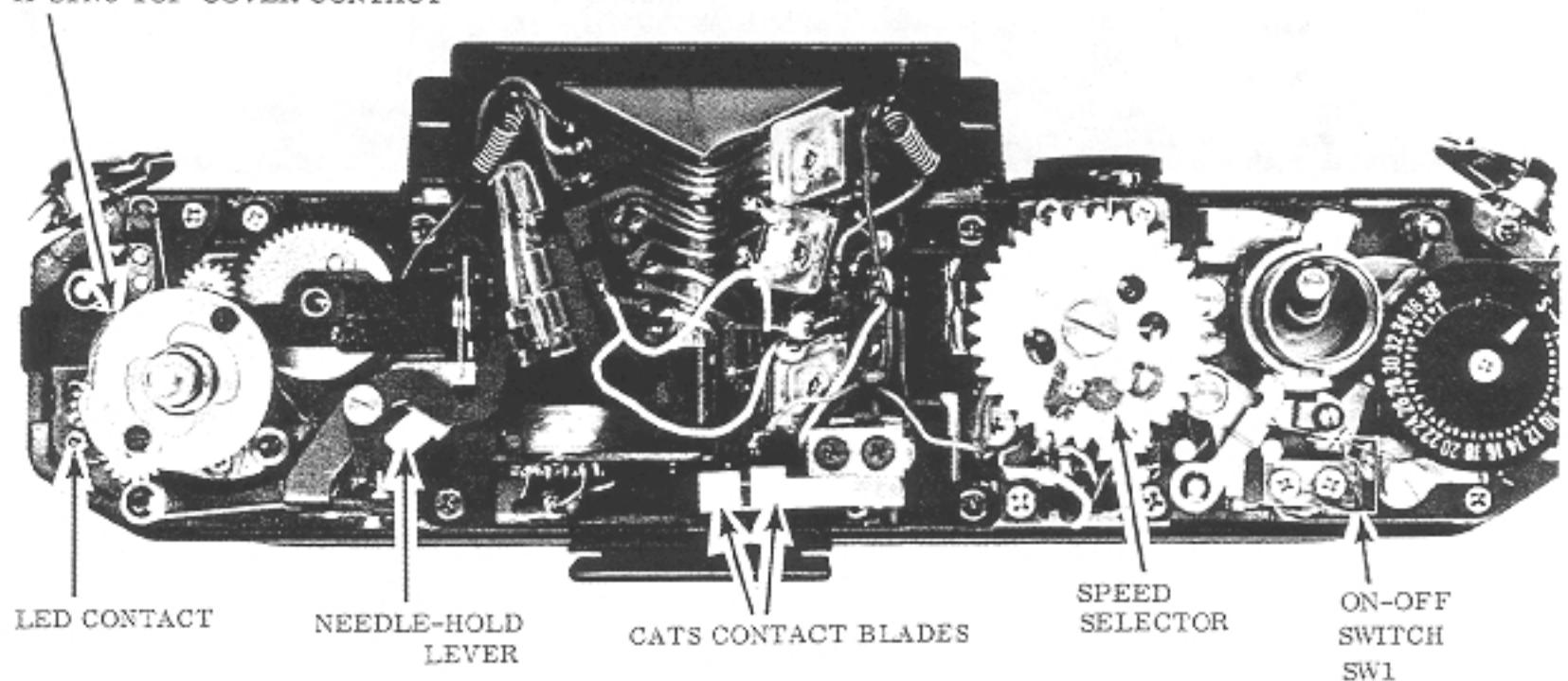
24





26A

X-SYNC TOP-COVER CONTACT



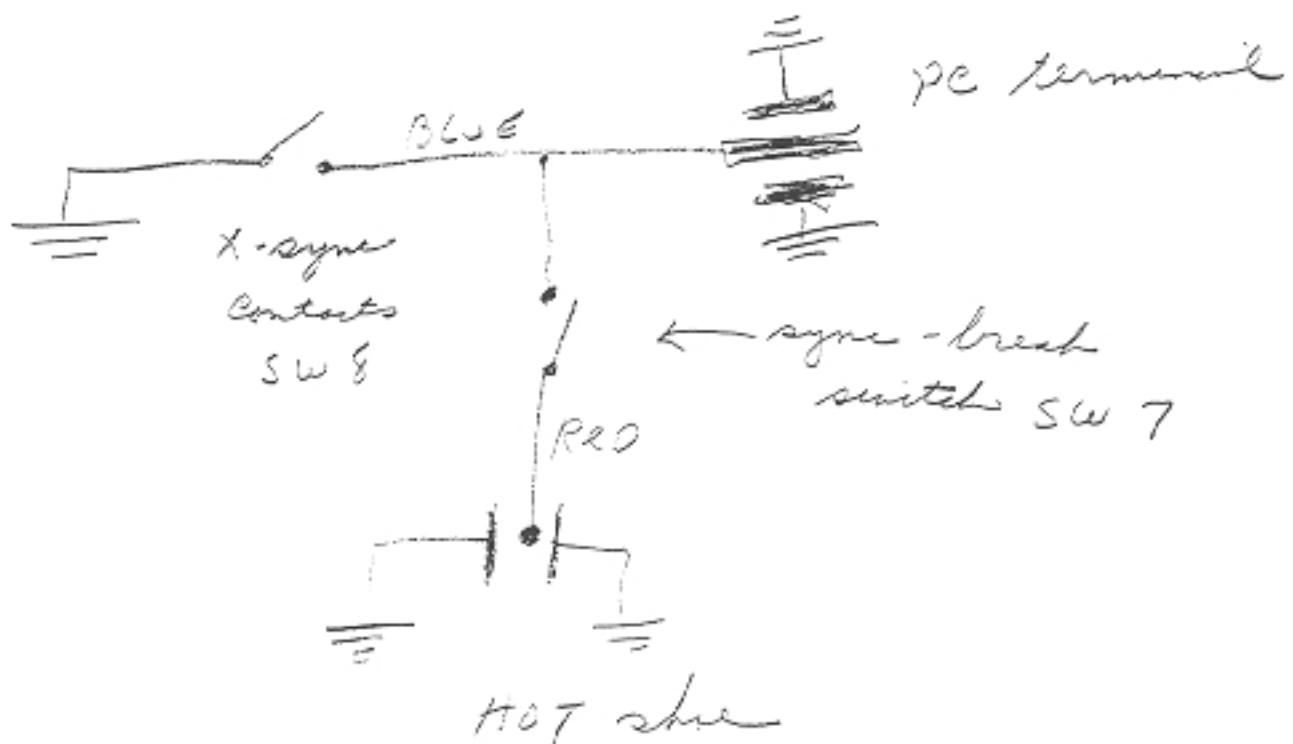
26B



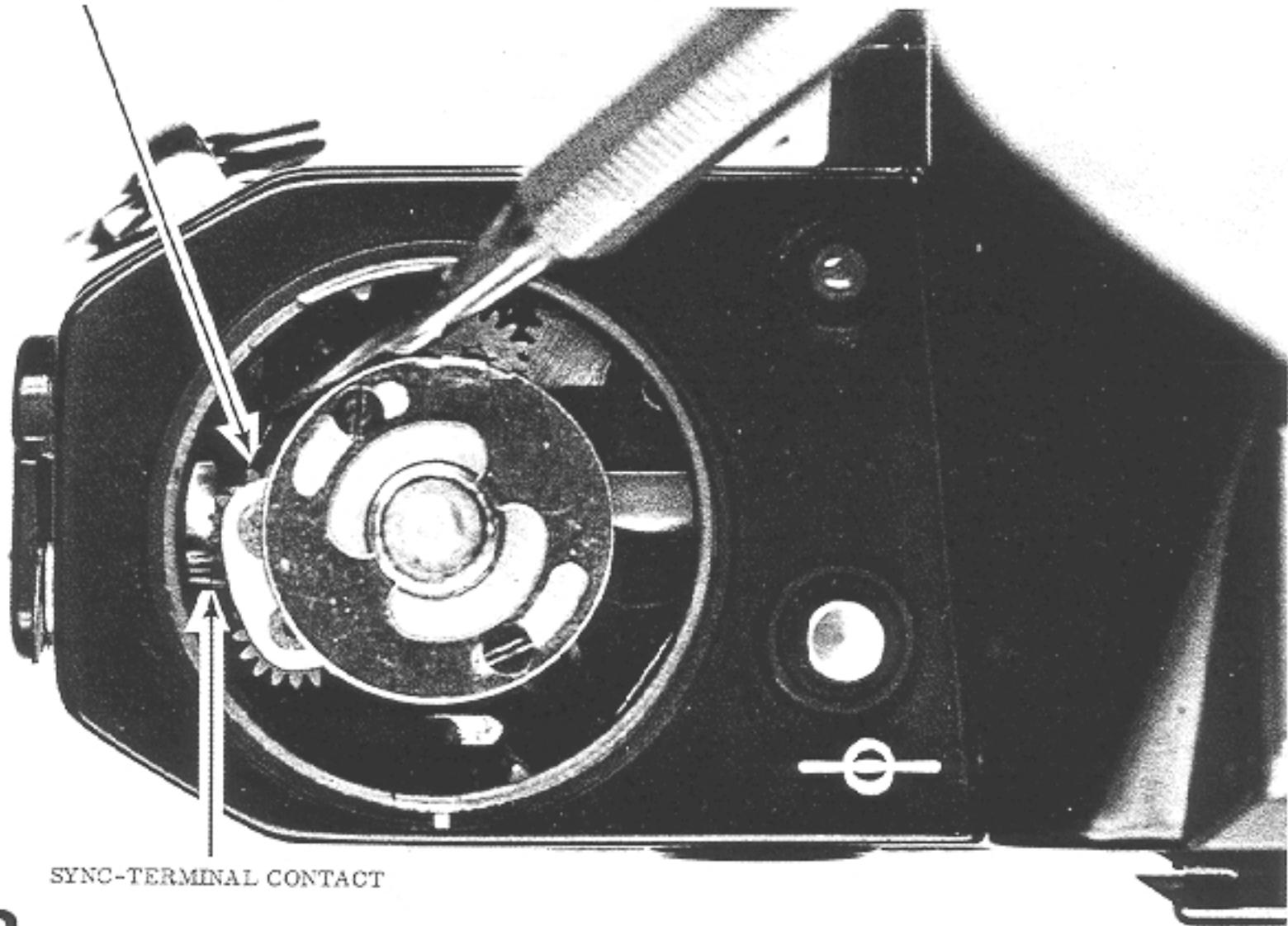
LED

THE LED SHOULD GLOW WITH 2 VOLTS
APPLIED ACROSS THE TERMINALS

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WHEN REPLACING THE TOP COVER, HOLD THE X-SYNC TOP-COVER CONTACT AWAY FROM THE SYNC-TERMINAL CONTACT



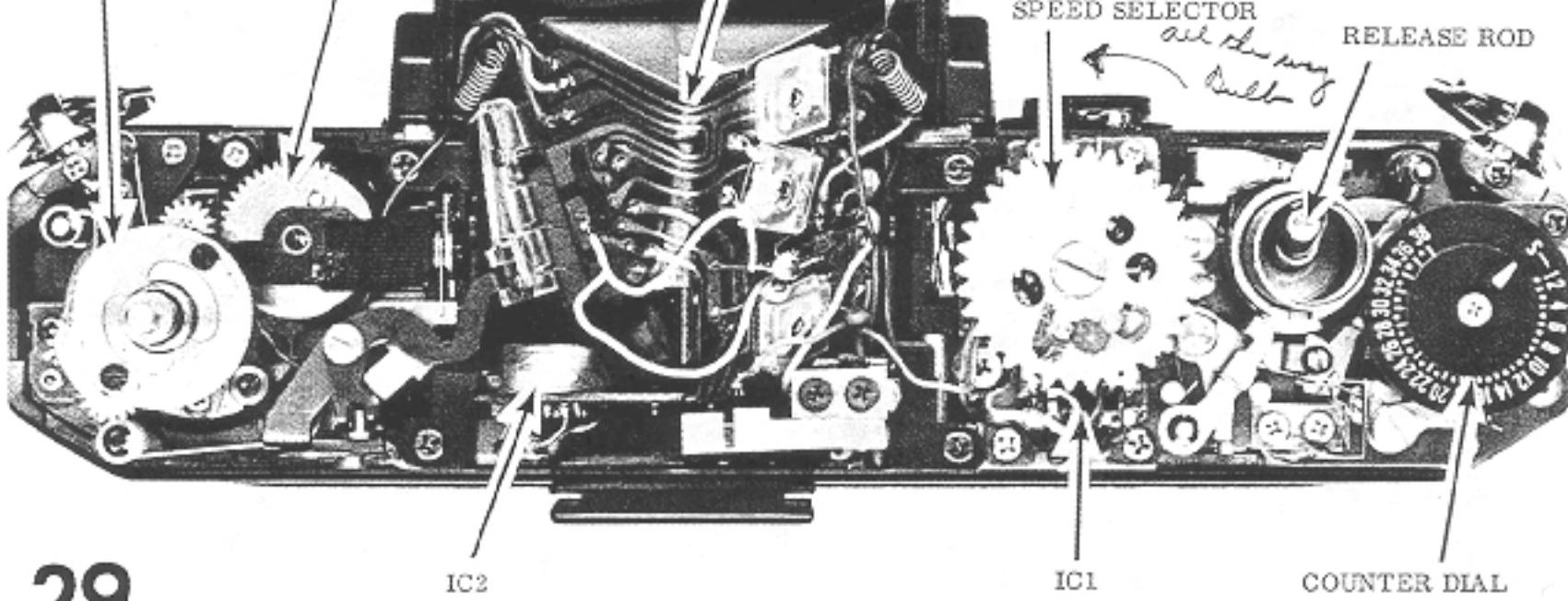
FILM-SPEED COUPLER

PENTAPRISM CIRCUIT BOARD

GALVANOMETER

SPEED SELECTOR

RELEASE ROD

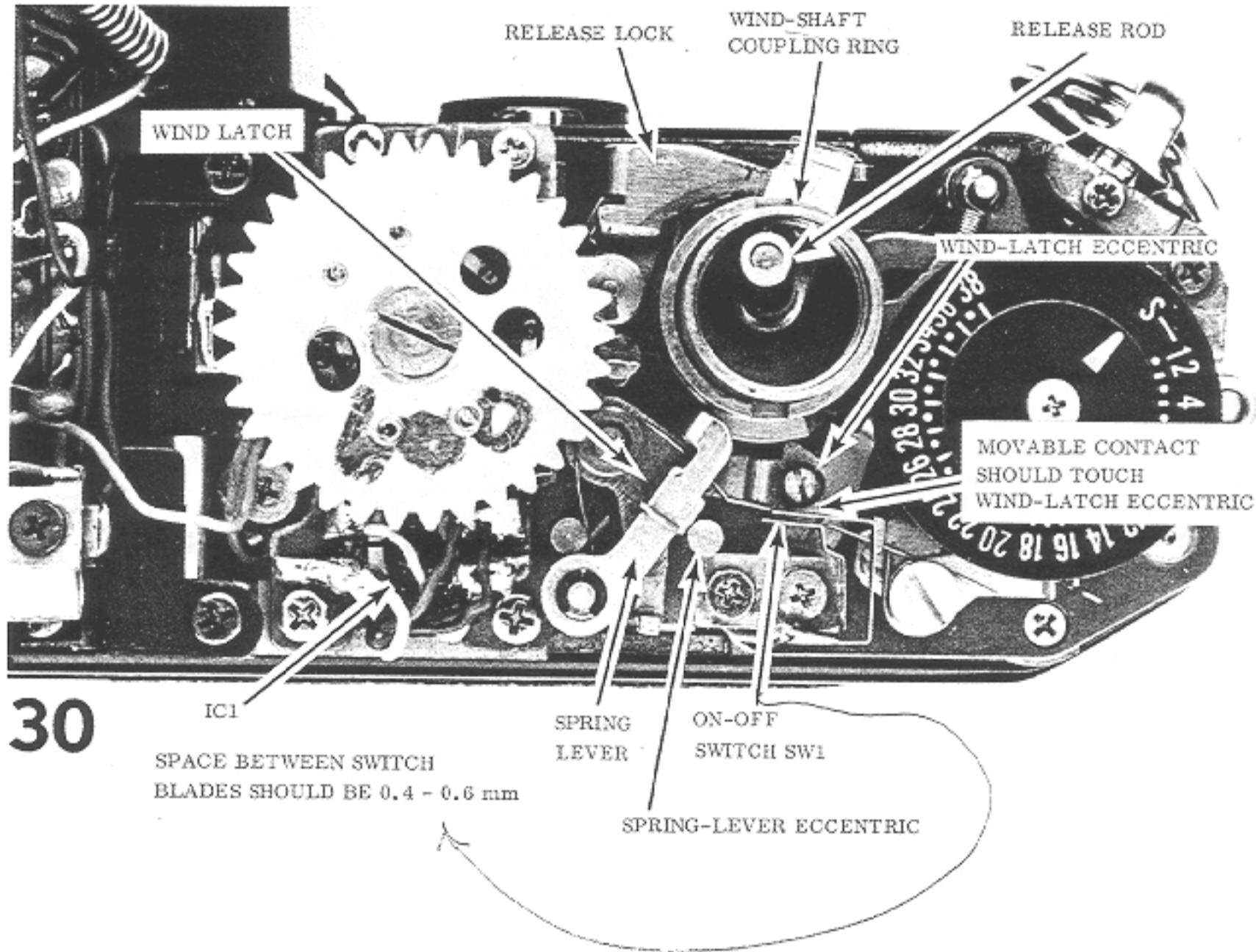


29

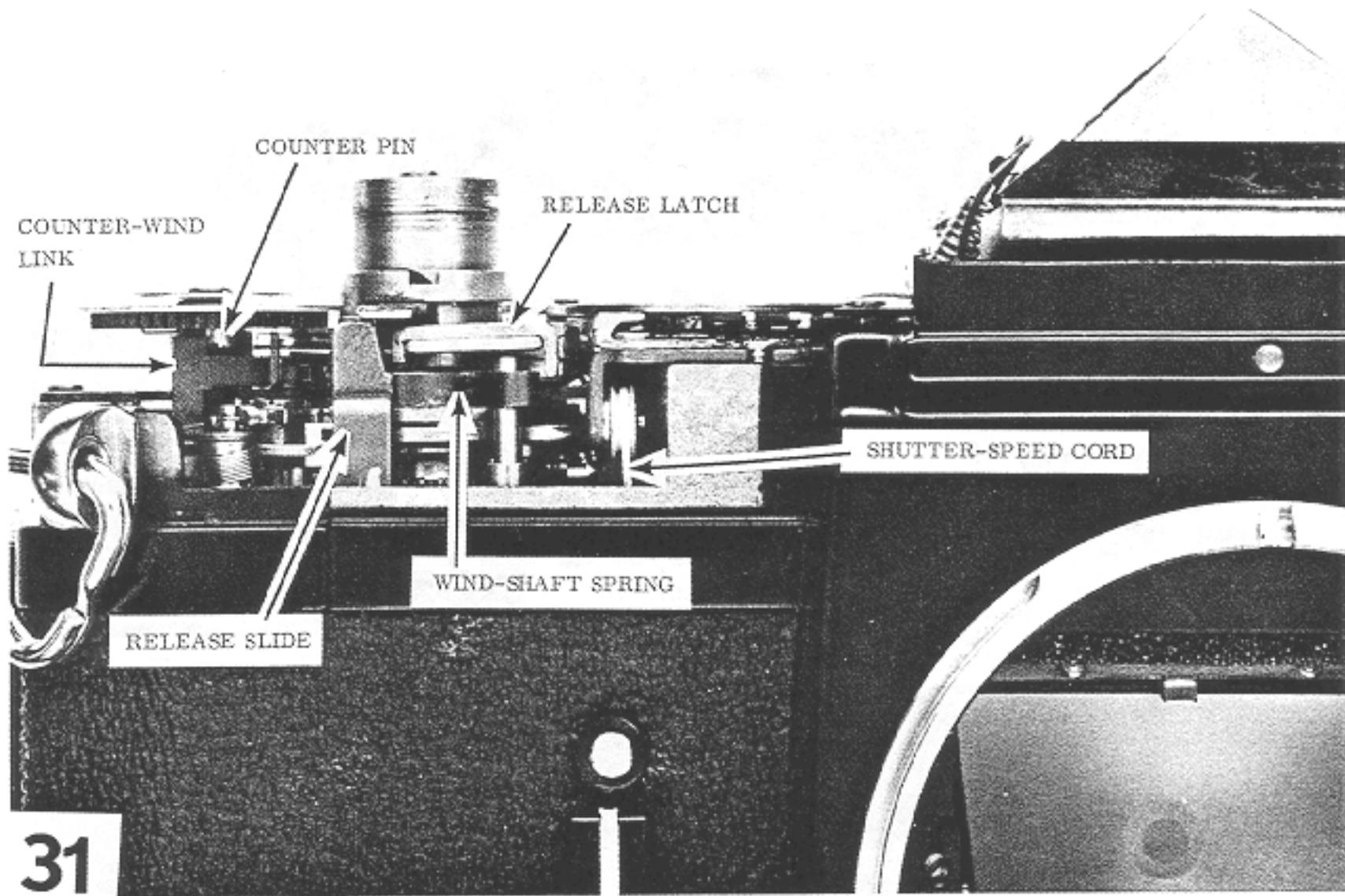
IC₁ - Electromagnet switch

IC₂ - mosjet amplifier

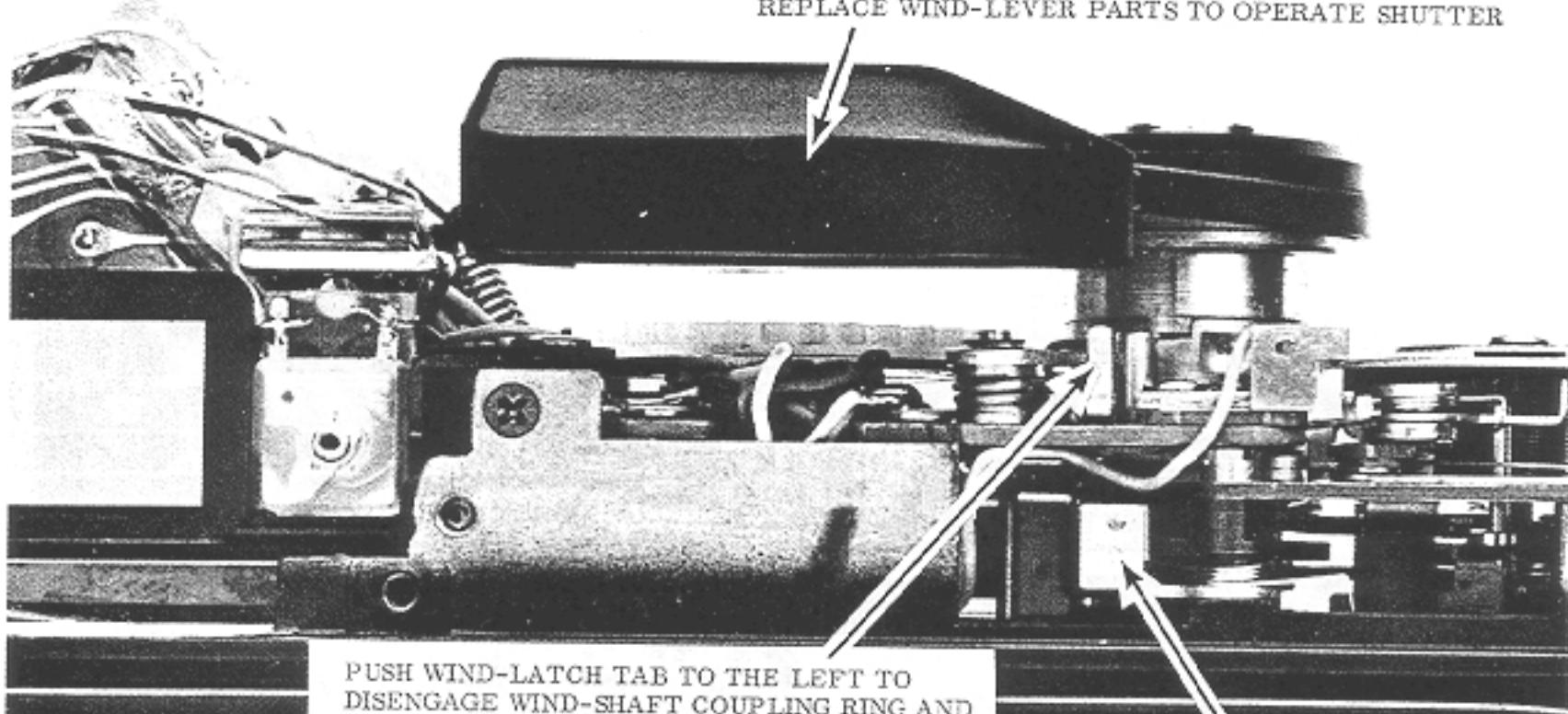
when faulty - meter drops suddenly down



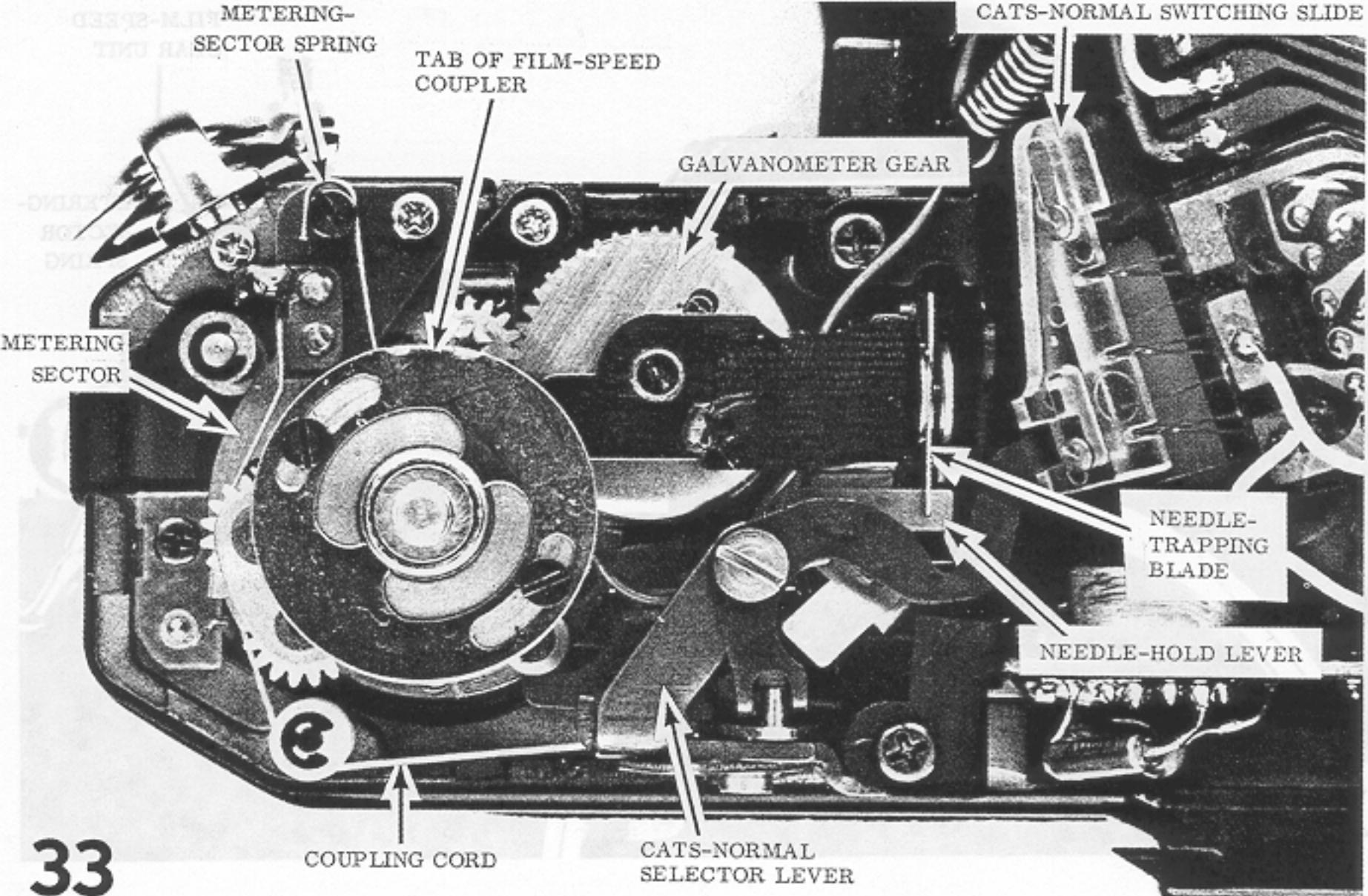
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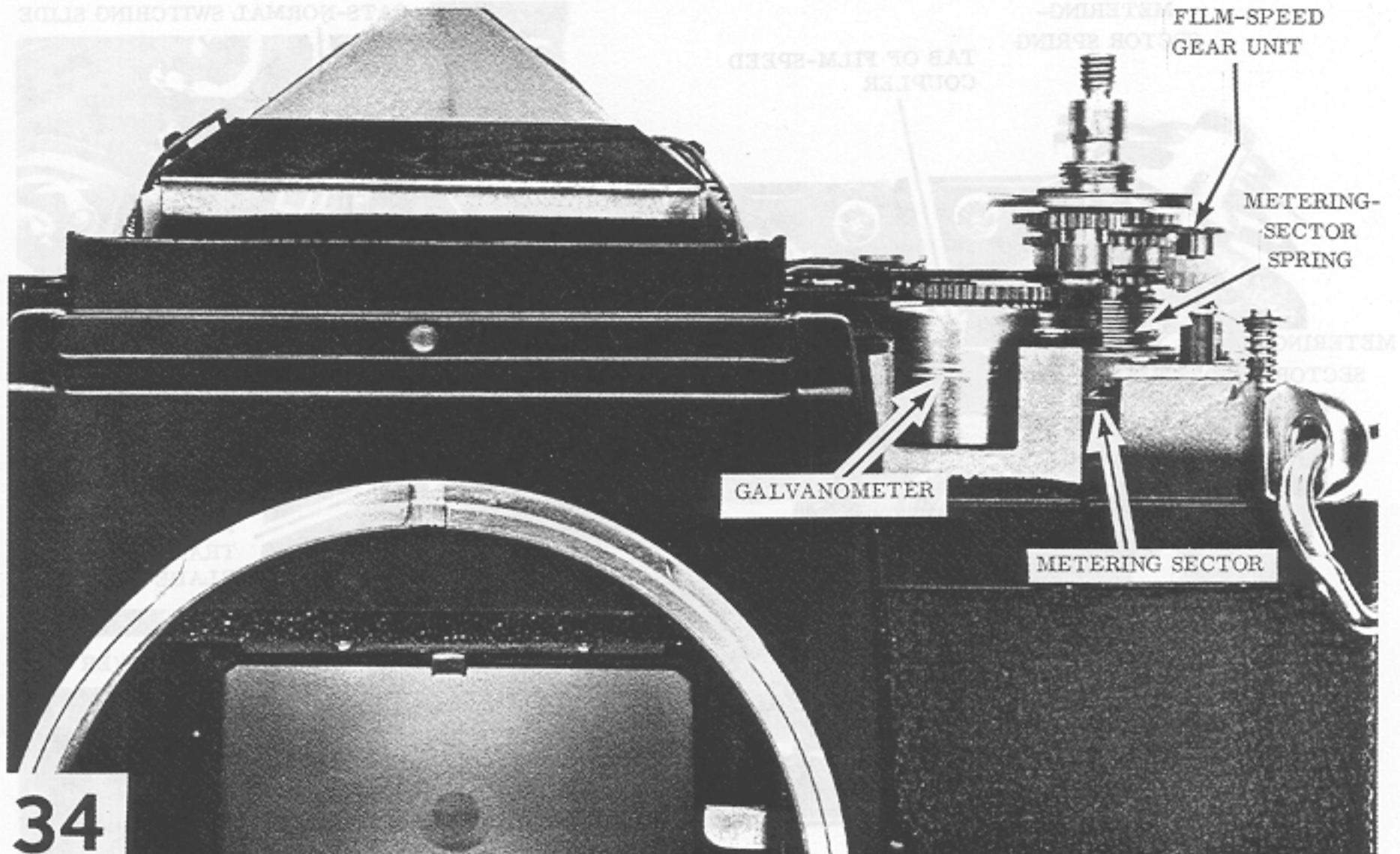


REPLACE WIND-LEVER PARTS TO OPERATE SHUTTER

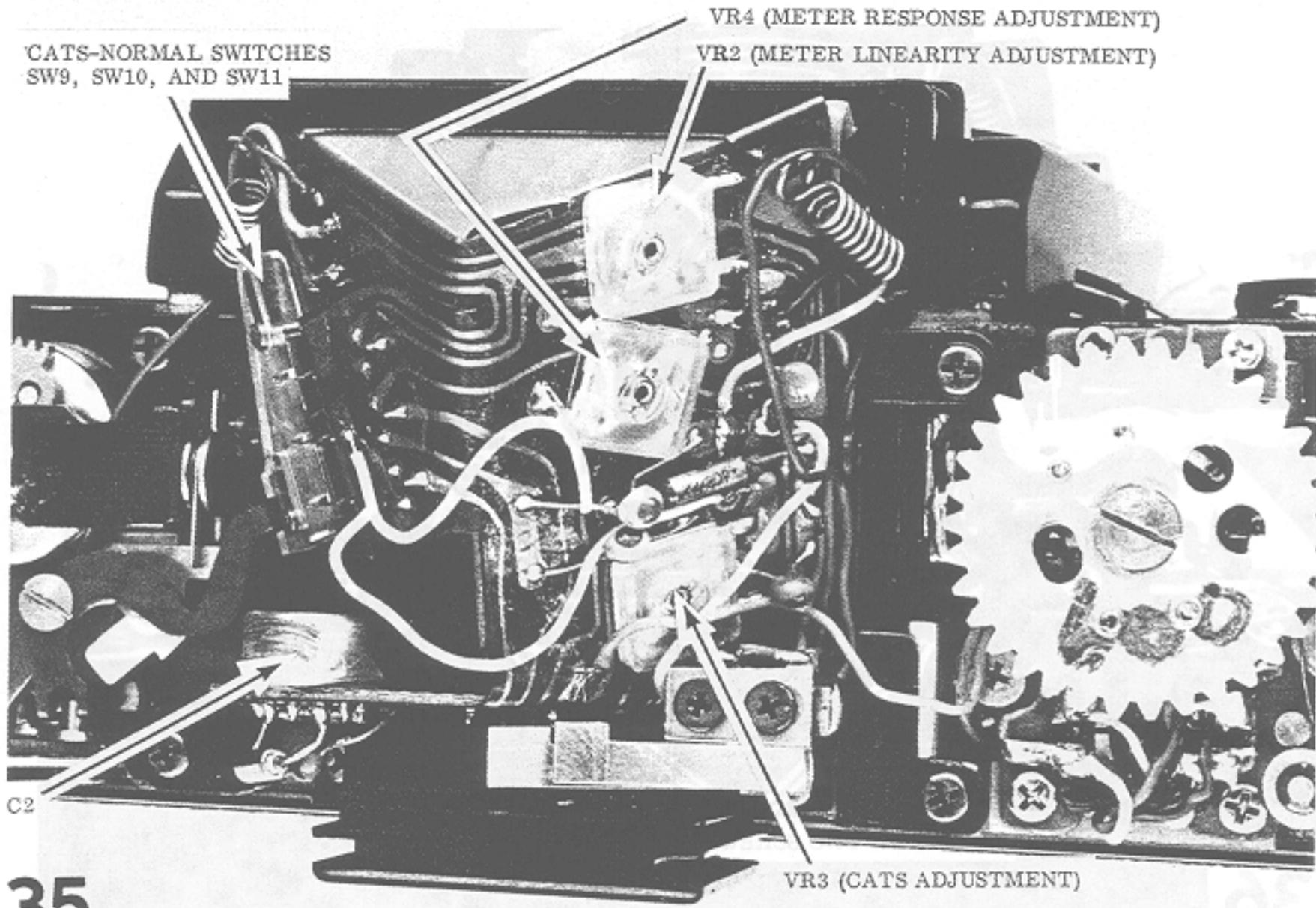


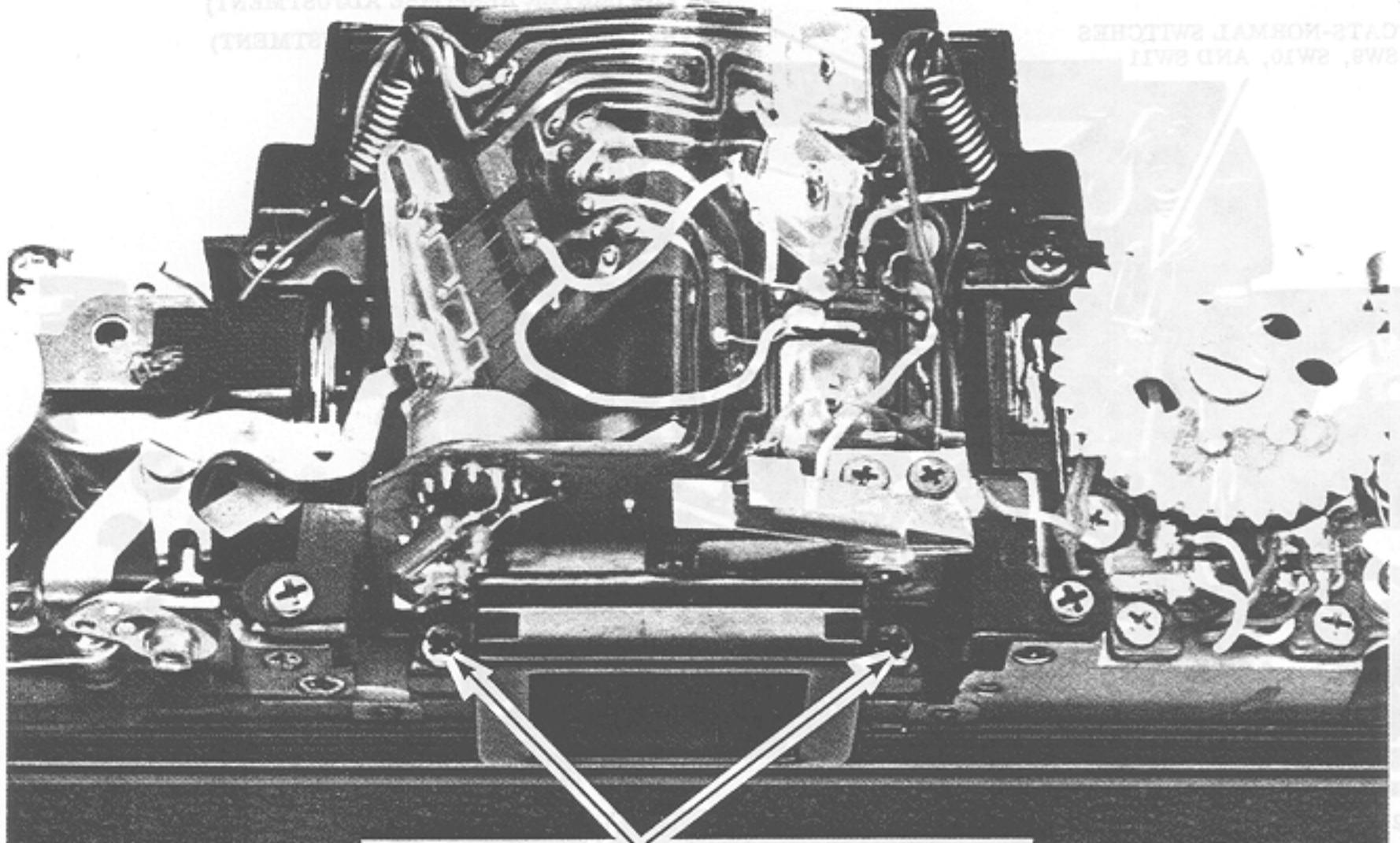
DOUBLE-EXPOSURE LEVER





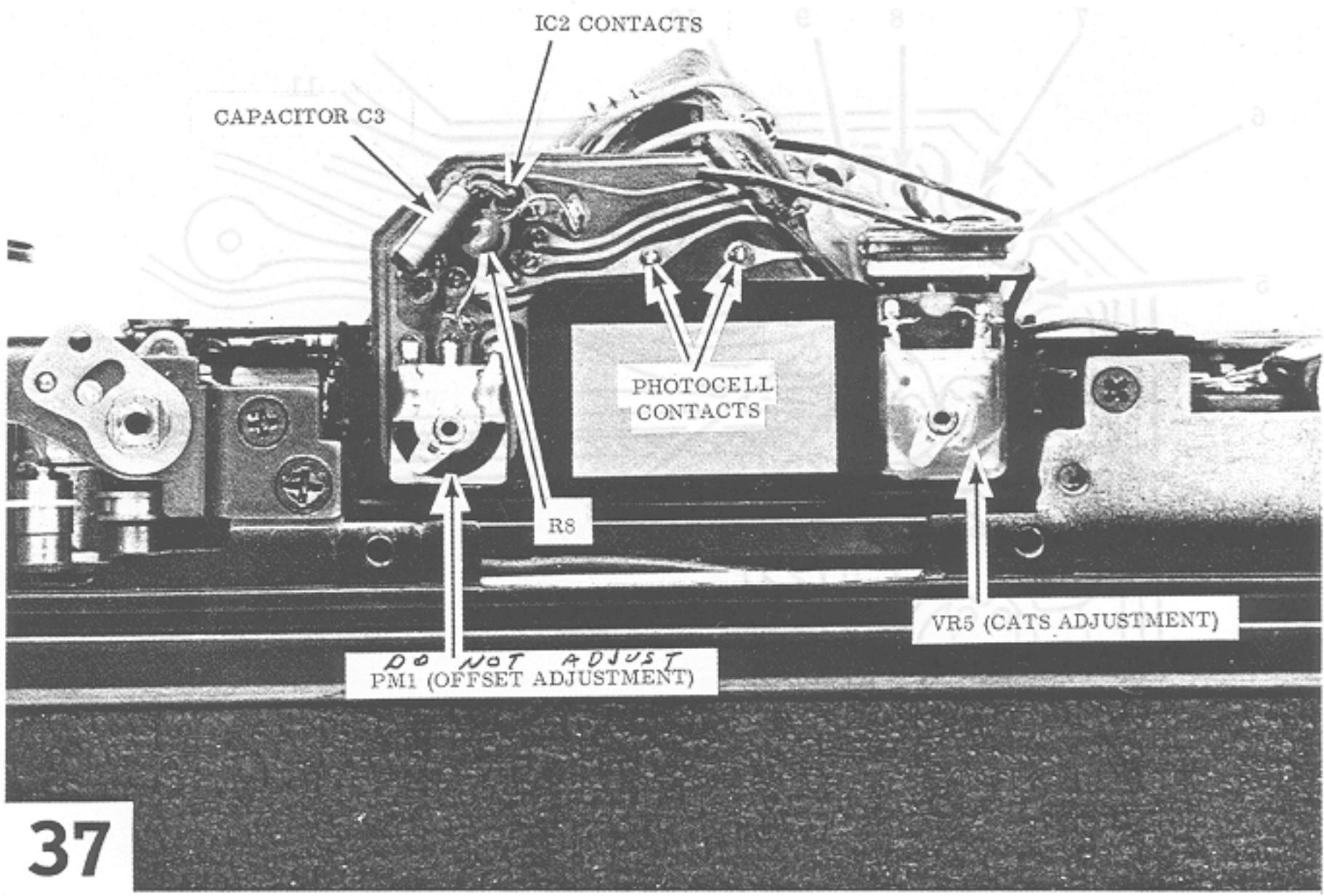
'CATS-NORMAL SWITCHES
SW9, SW10, AND SW11





CAPS-NORMAL SWITCHES
SW3, SW10, AND SW11

REMOVE TWO SCREWS AND LIFT OUT EYELENS

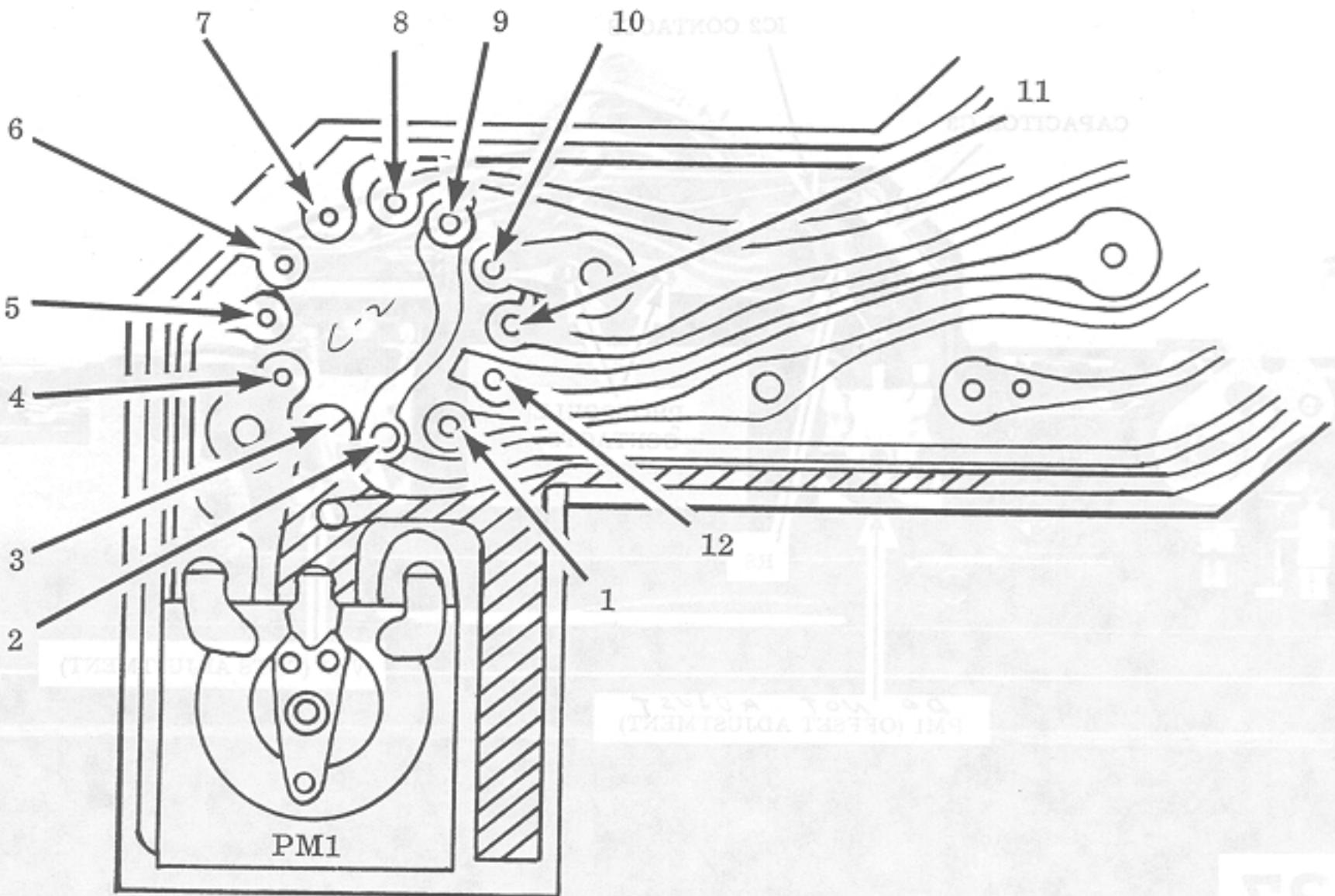


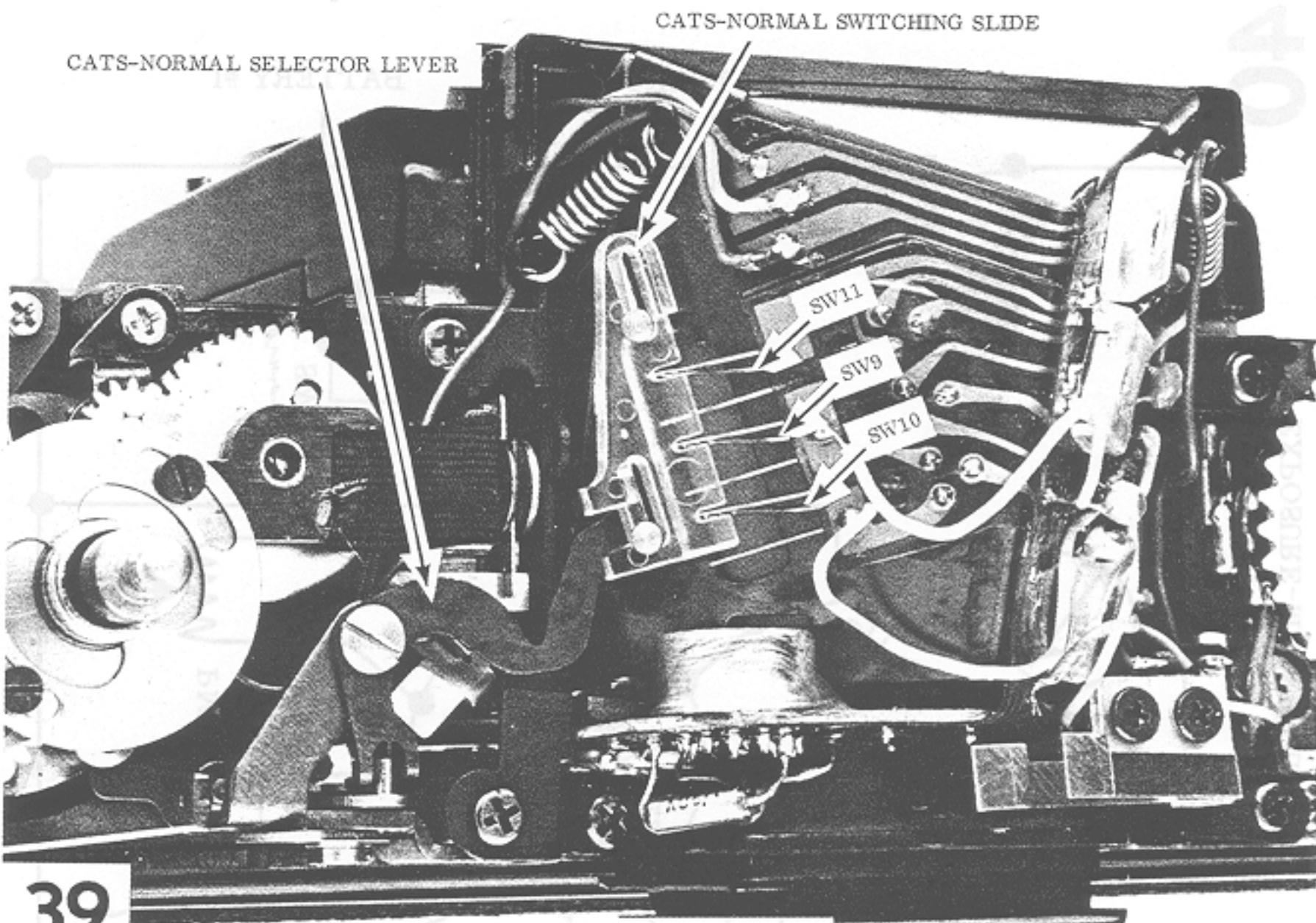
37

88

Photo cells



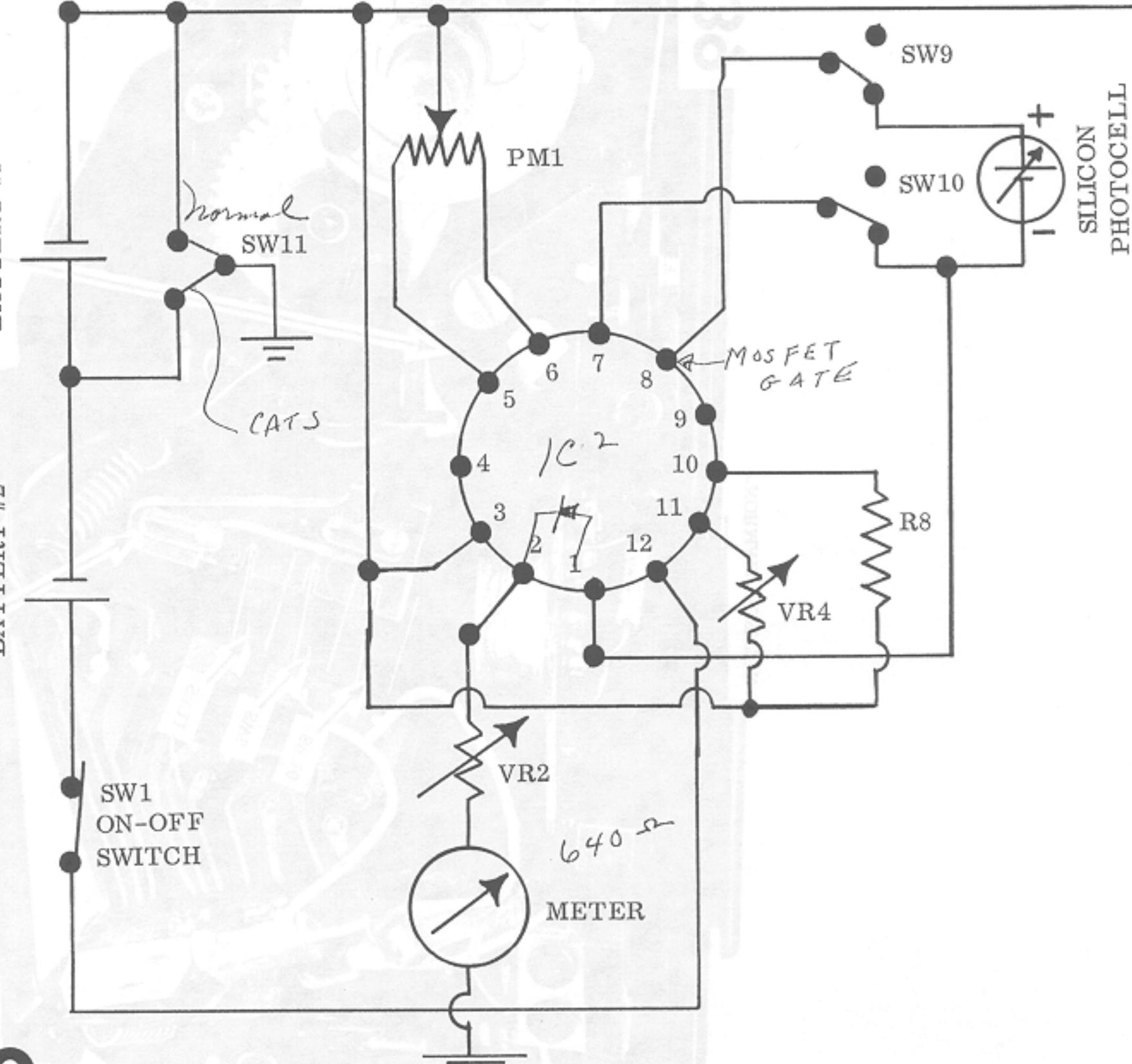




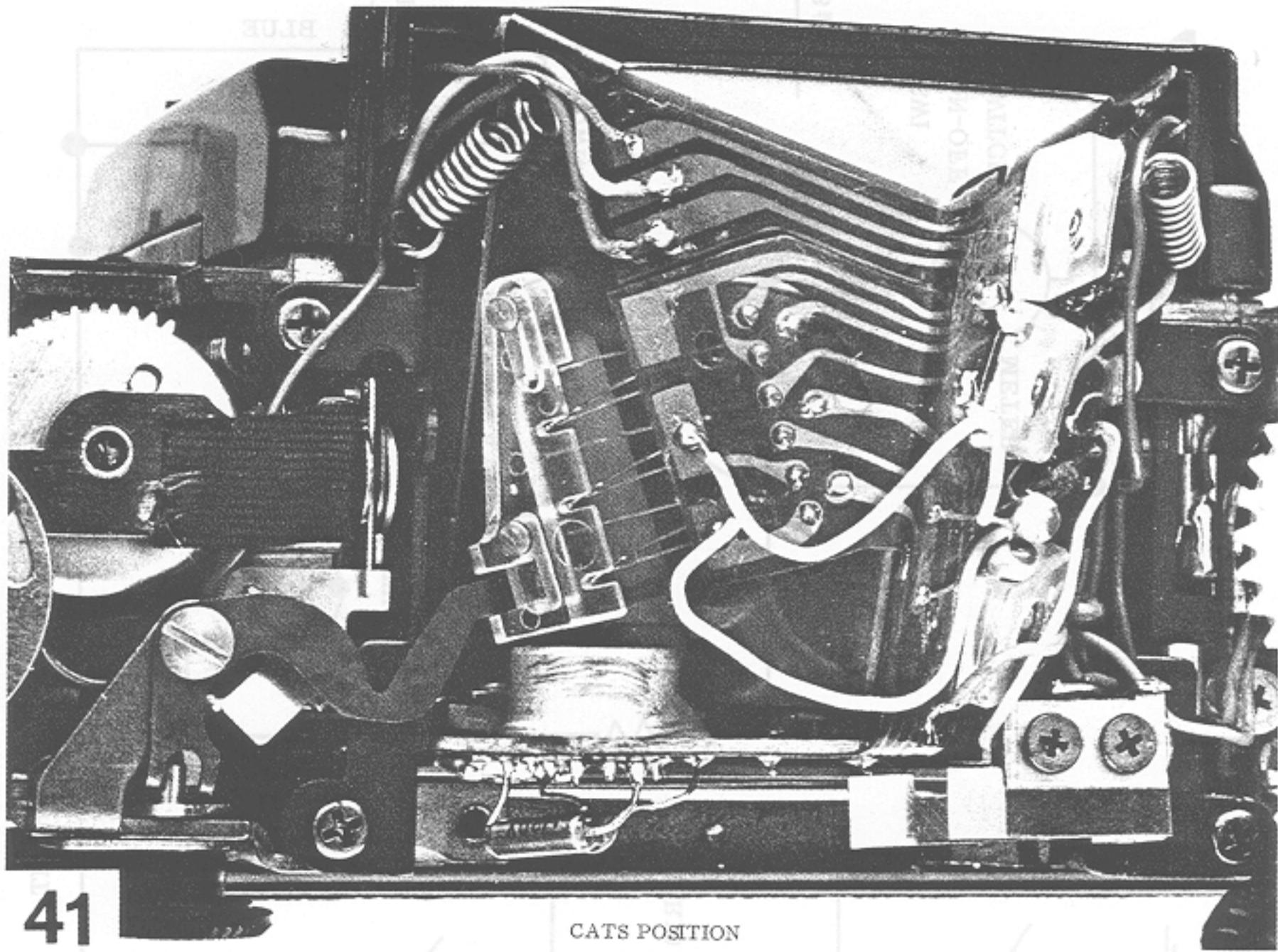
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"NORMAL" POSITION

BATTERY #1



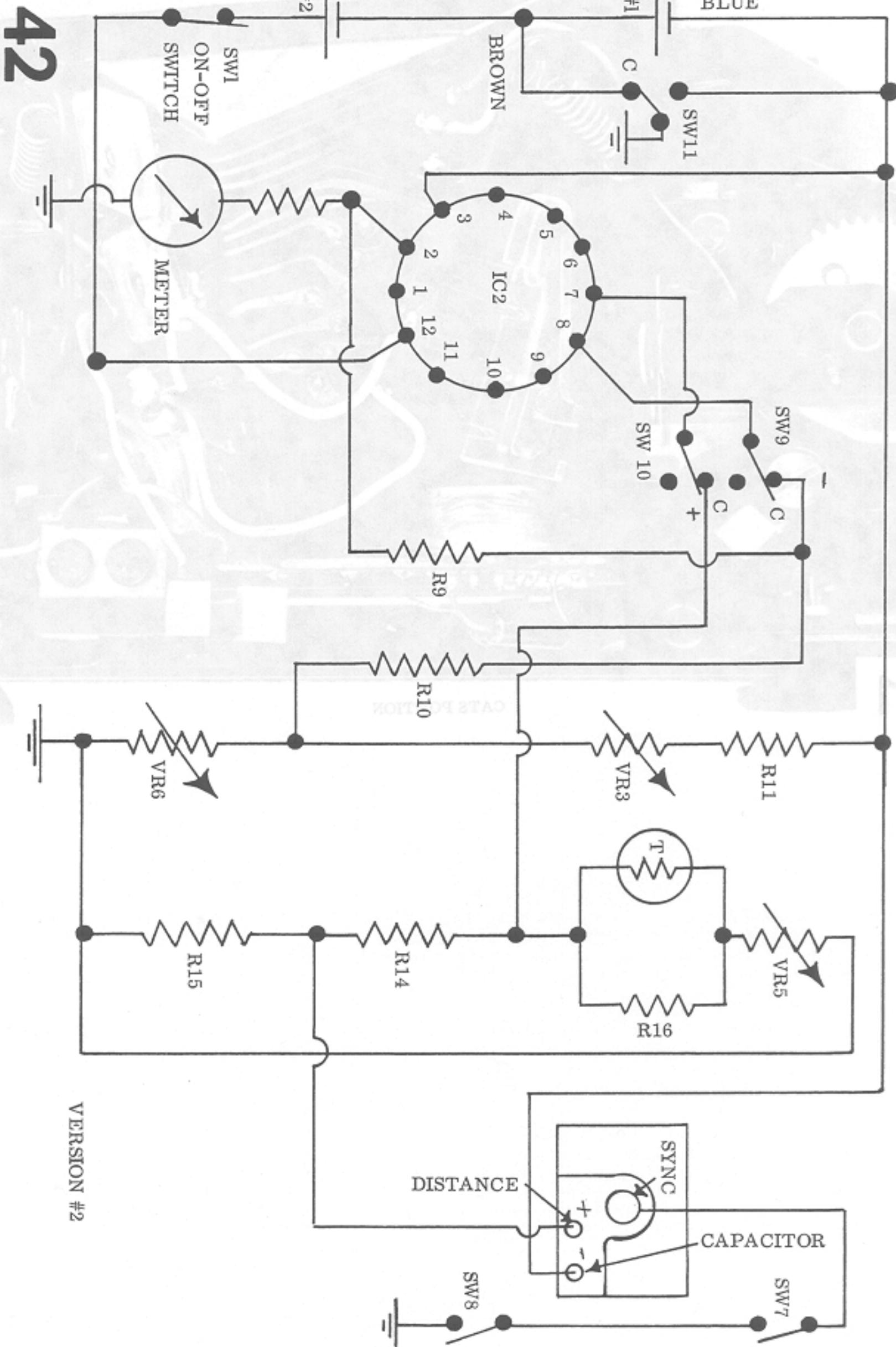
EXPOSURE-METER CIRCUIT



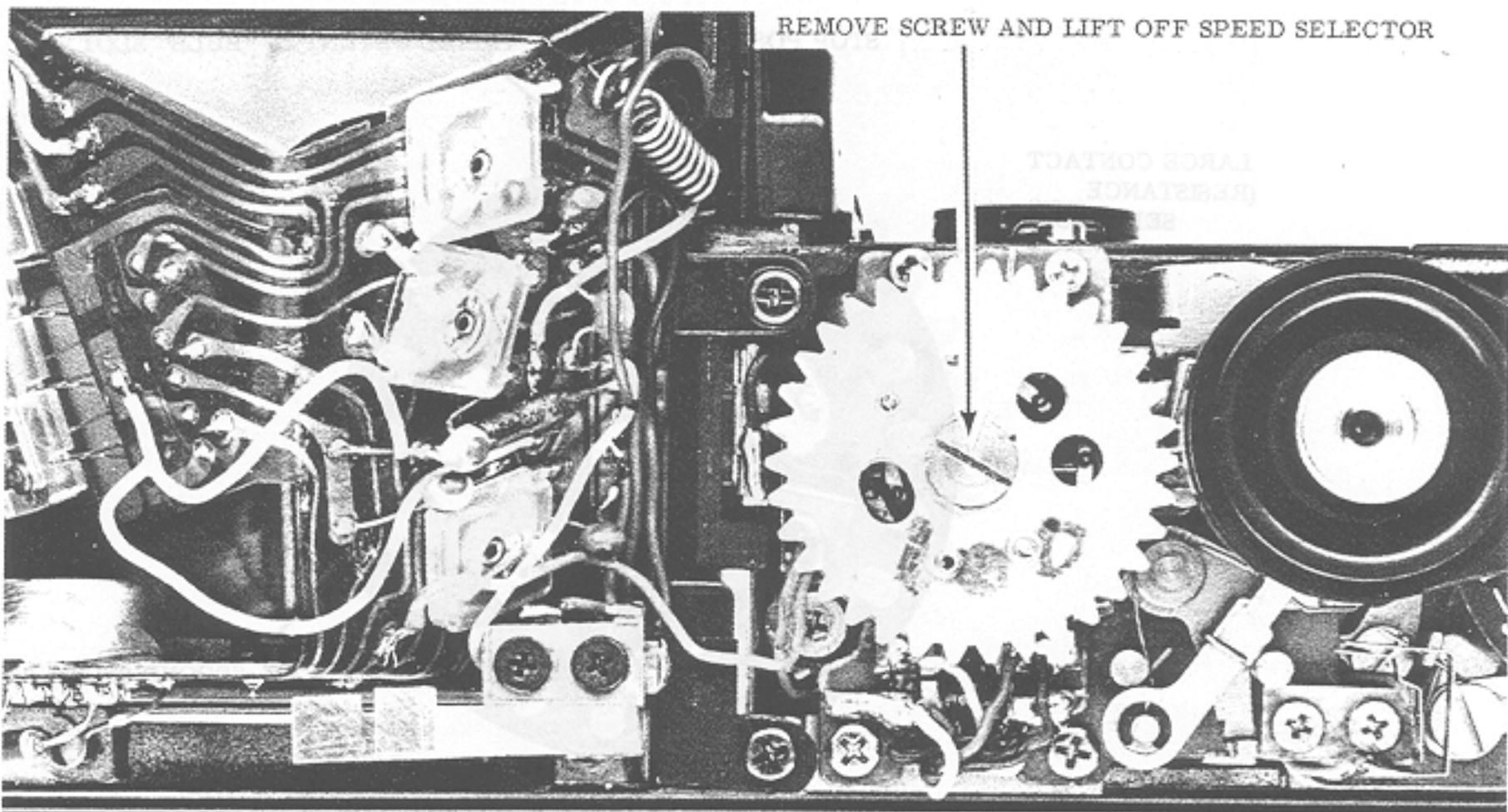
41

CATS POSITION

CATS CIRCUIT



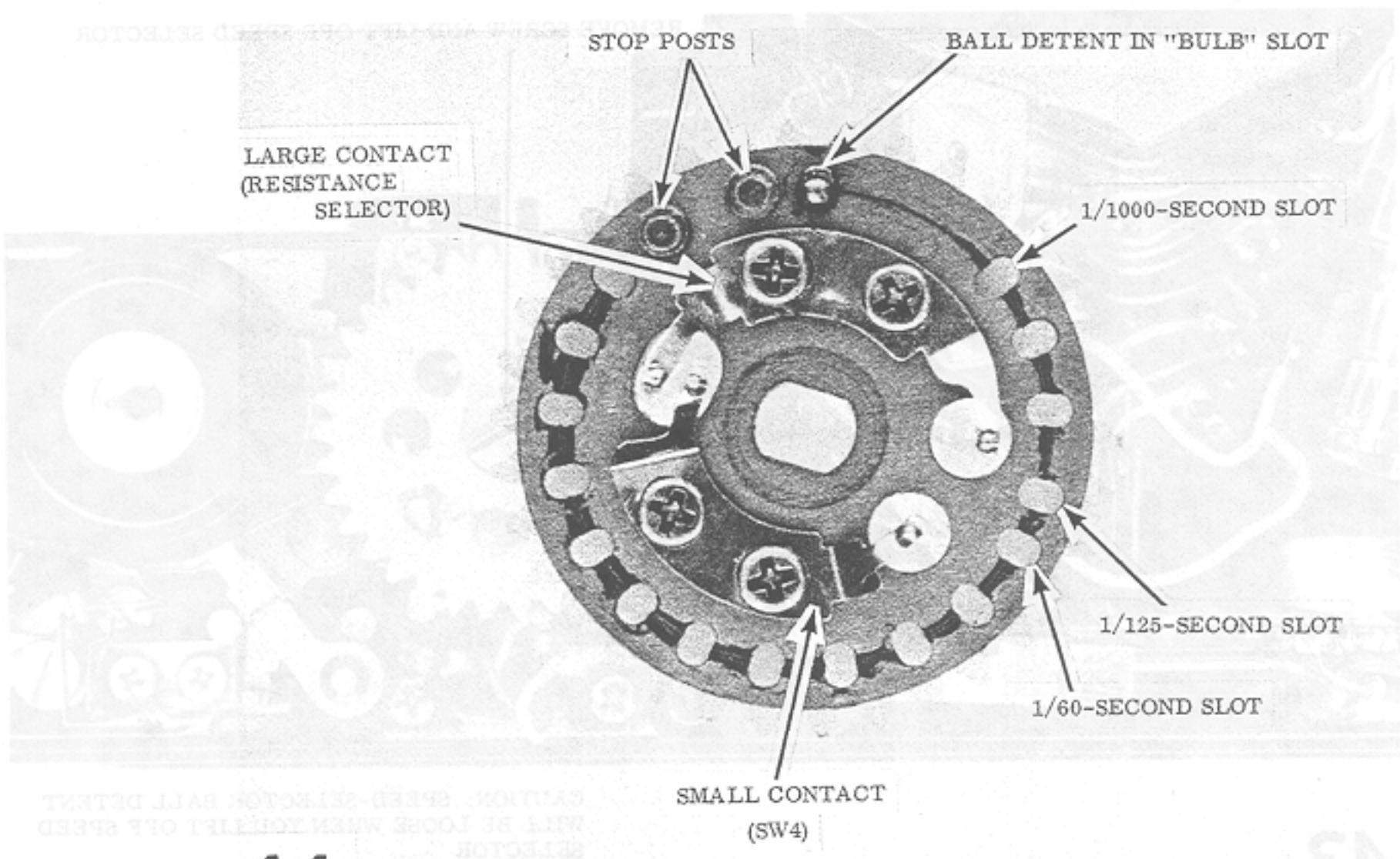
VERSION #2



REMOVE SCREW AND LIFT OFF SPEED SELECTOR

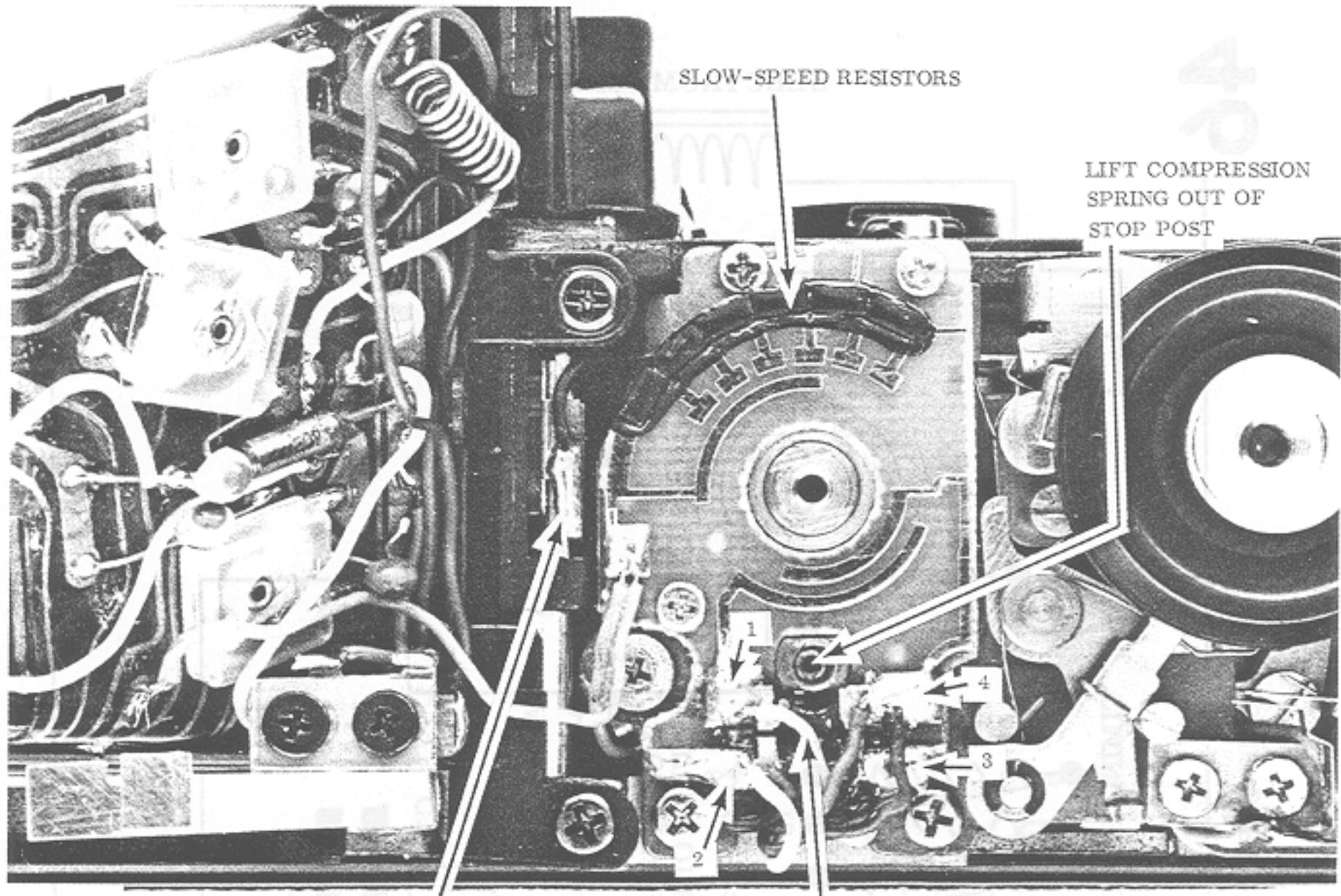
TOOTHED PLATE
GEAR
SPEED-SELECTOR
BALL DETENT

CAUTION: SPEED-SELECTOR BALL DETENT
WILL BE LOOSE WHEN YOU LIFT OFF SPEED
SELECTOR



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UNDERSIDE OF SPEED SELECTOR



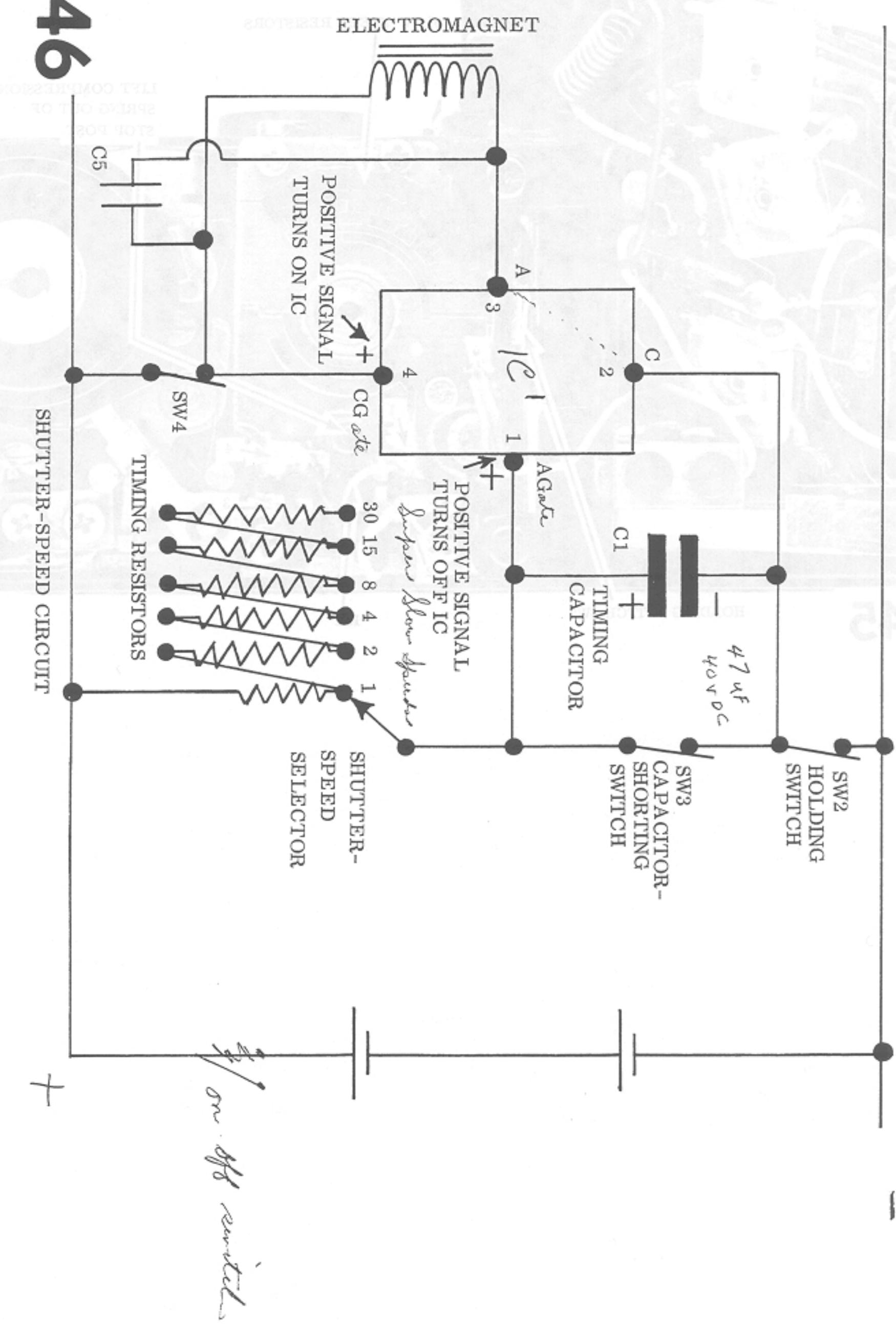
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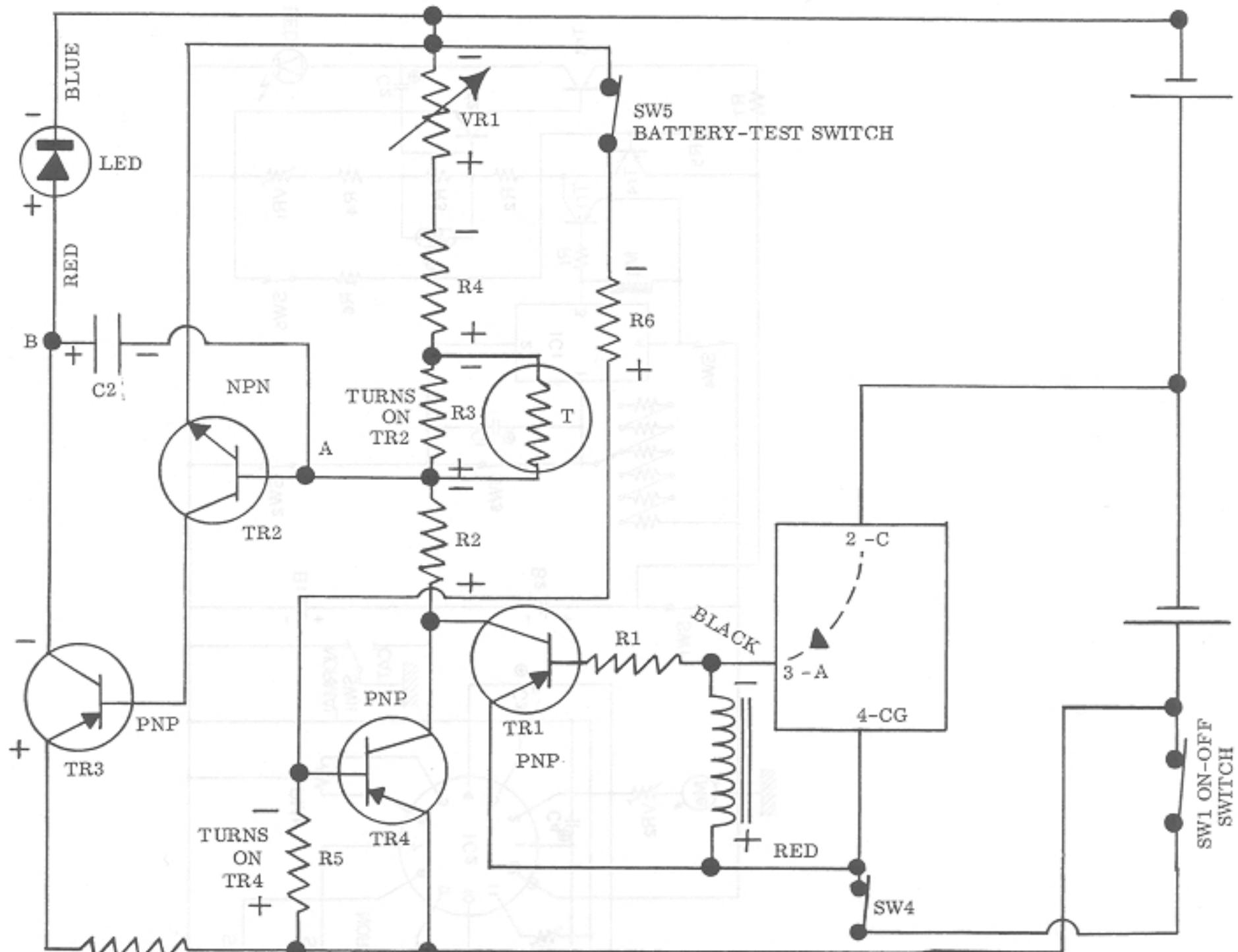
HOLDING SWITCH SW2

IC1

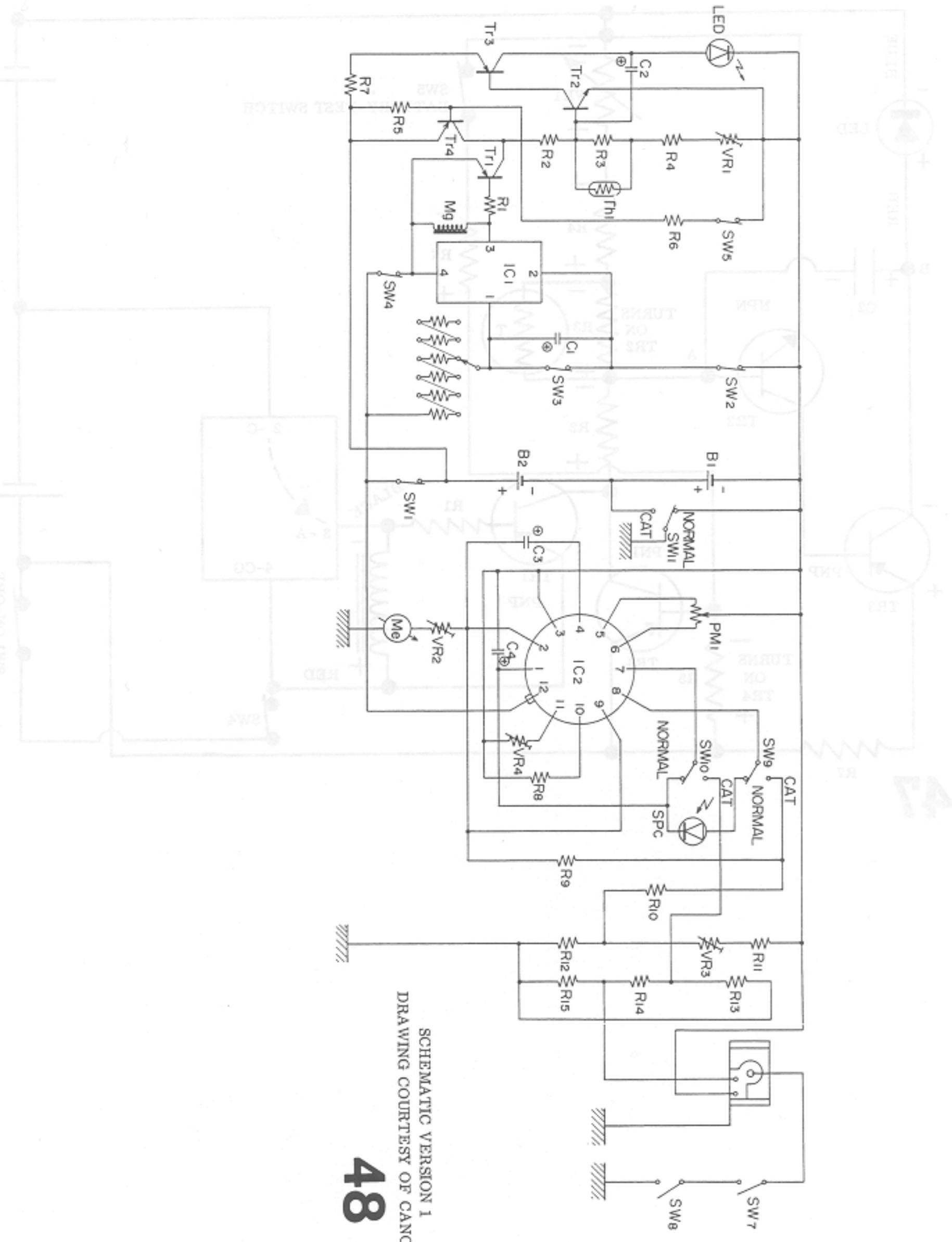
CIRCUIT

46

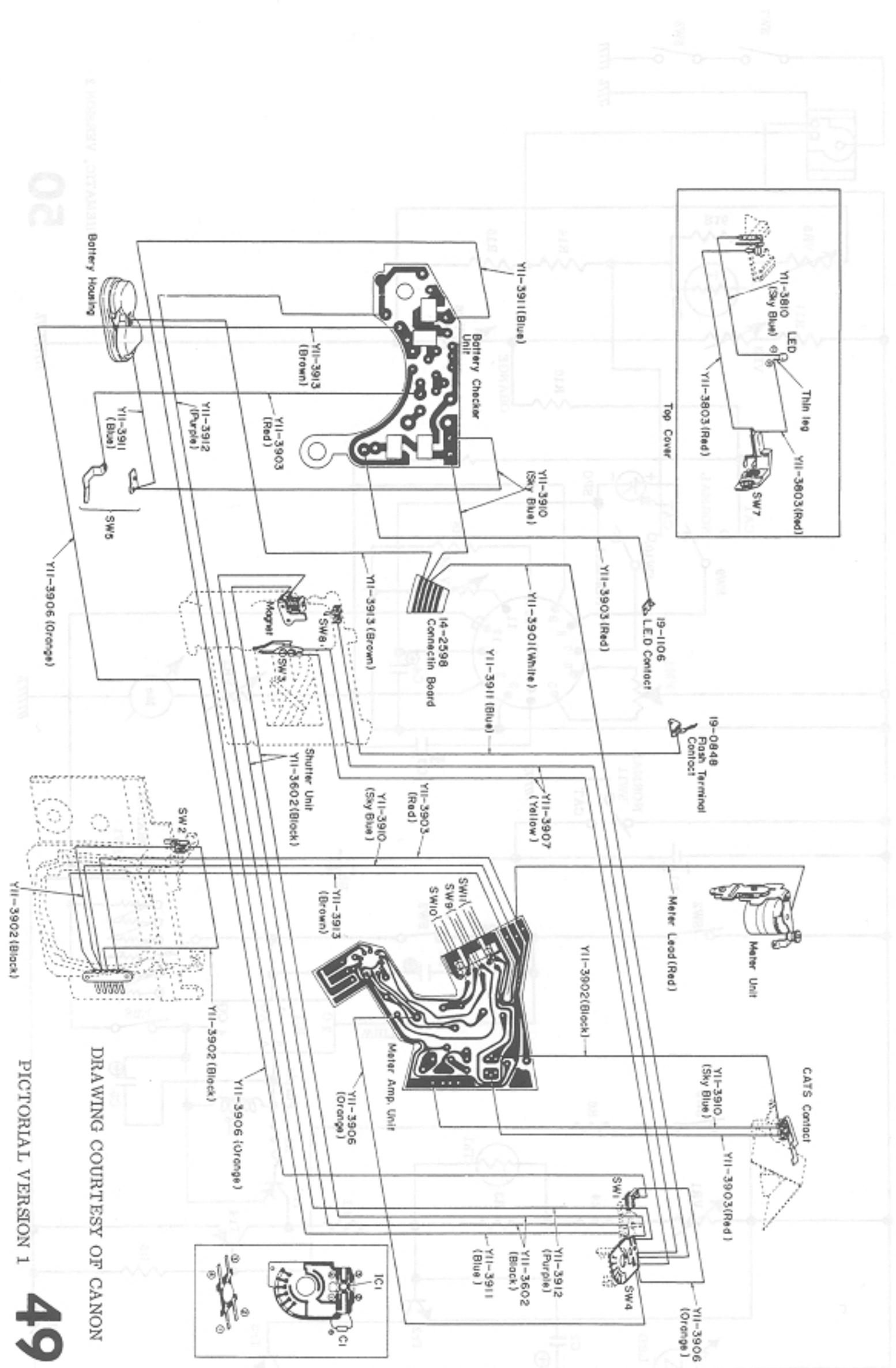


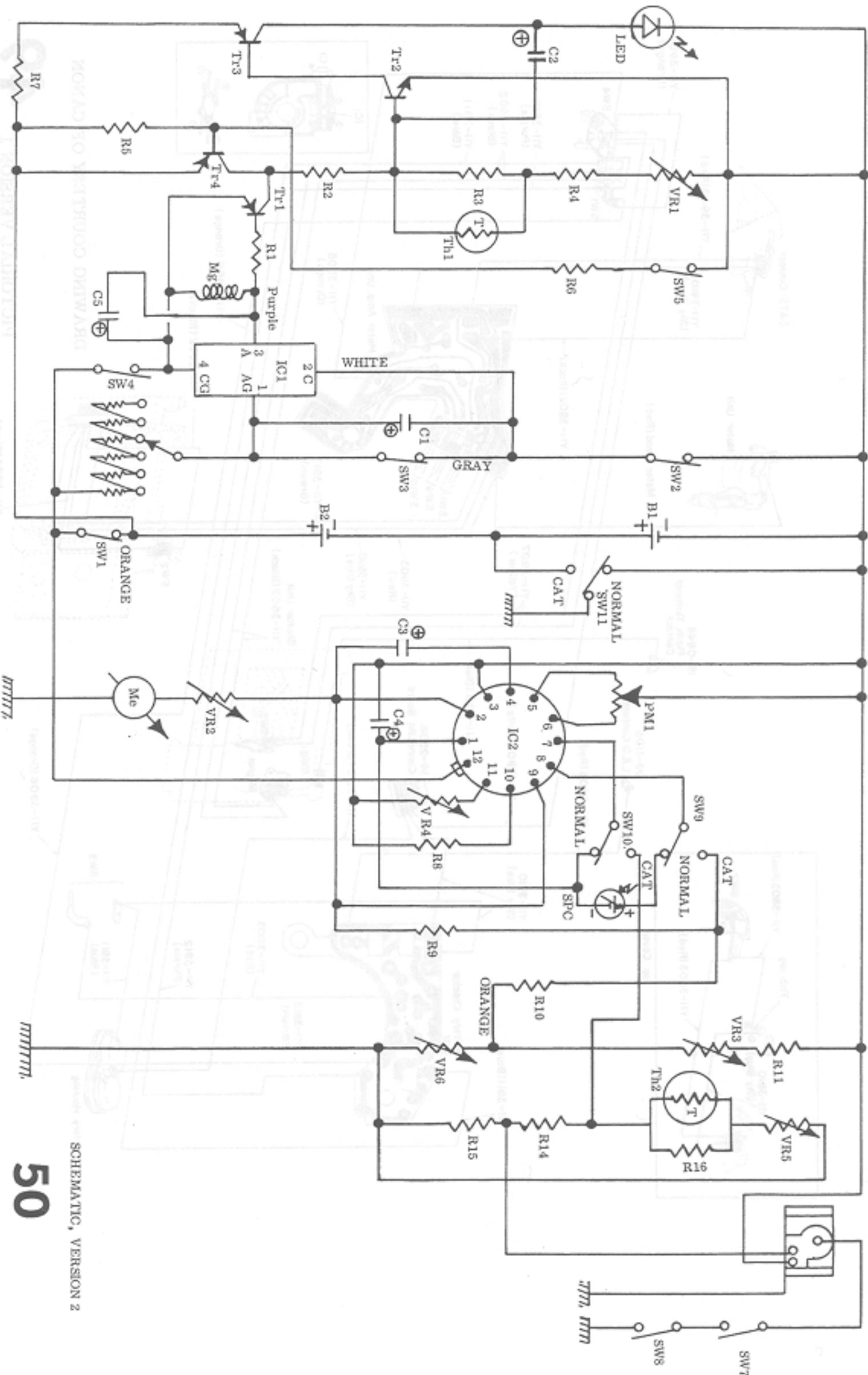


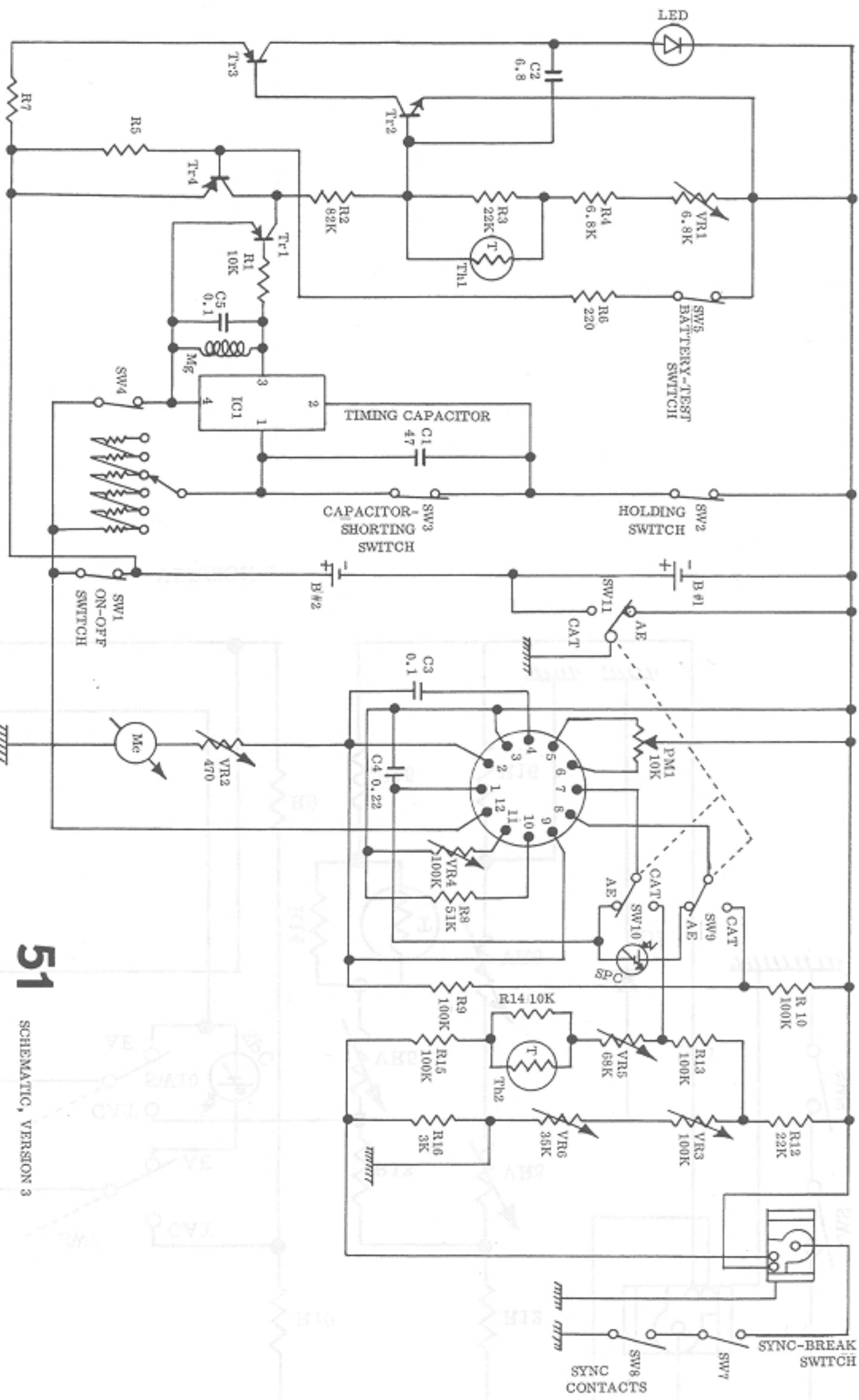
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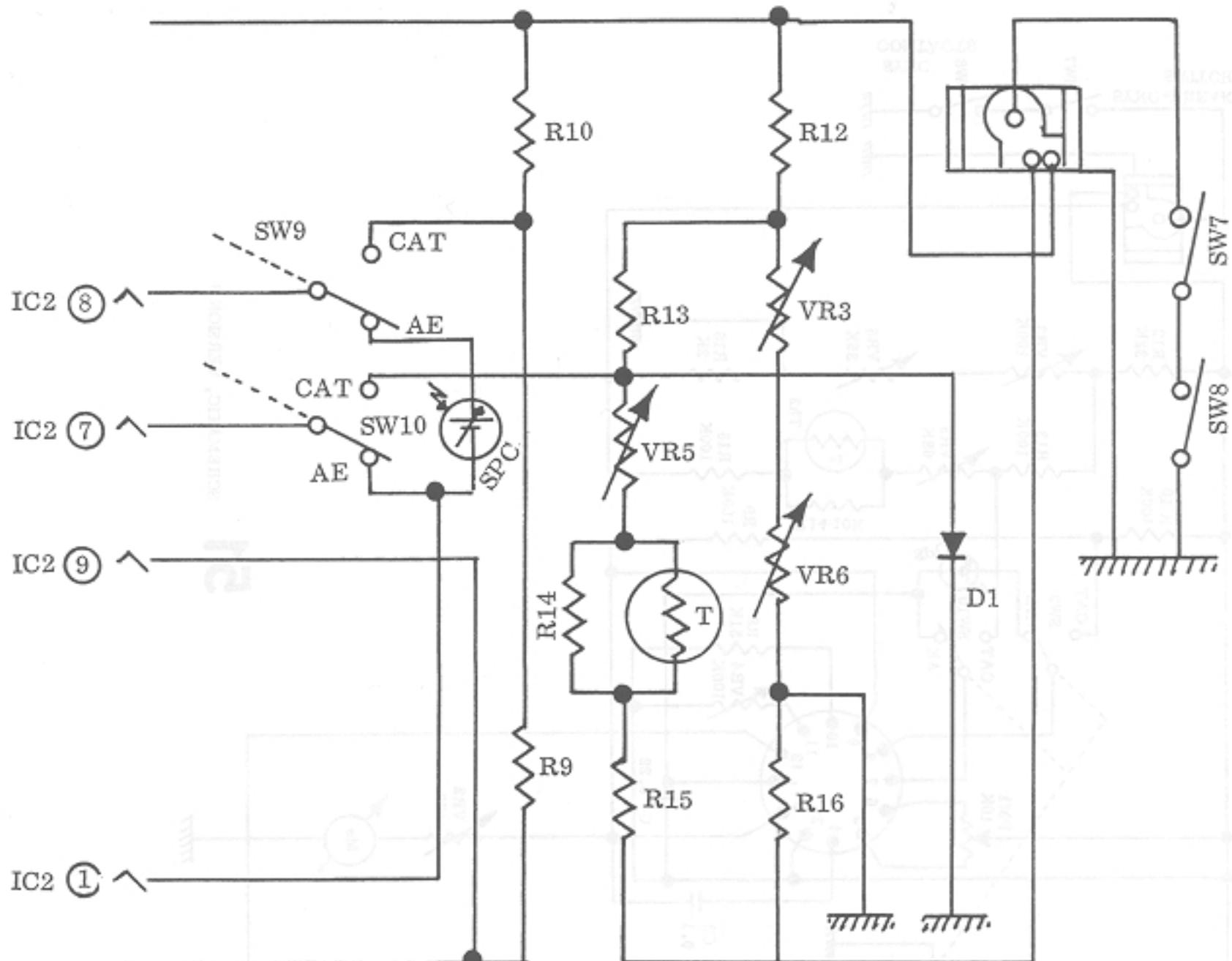






51

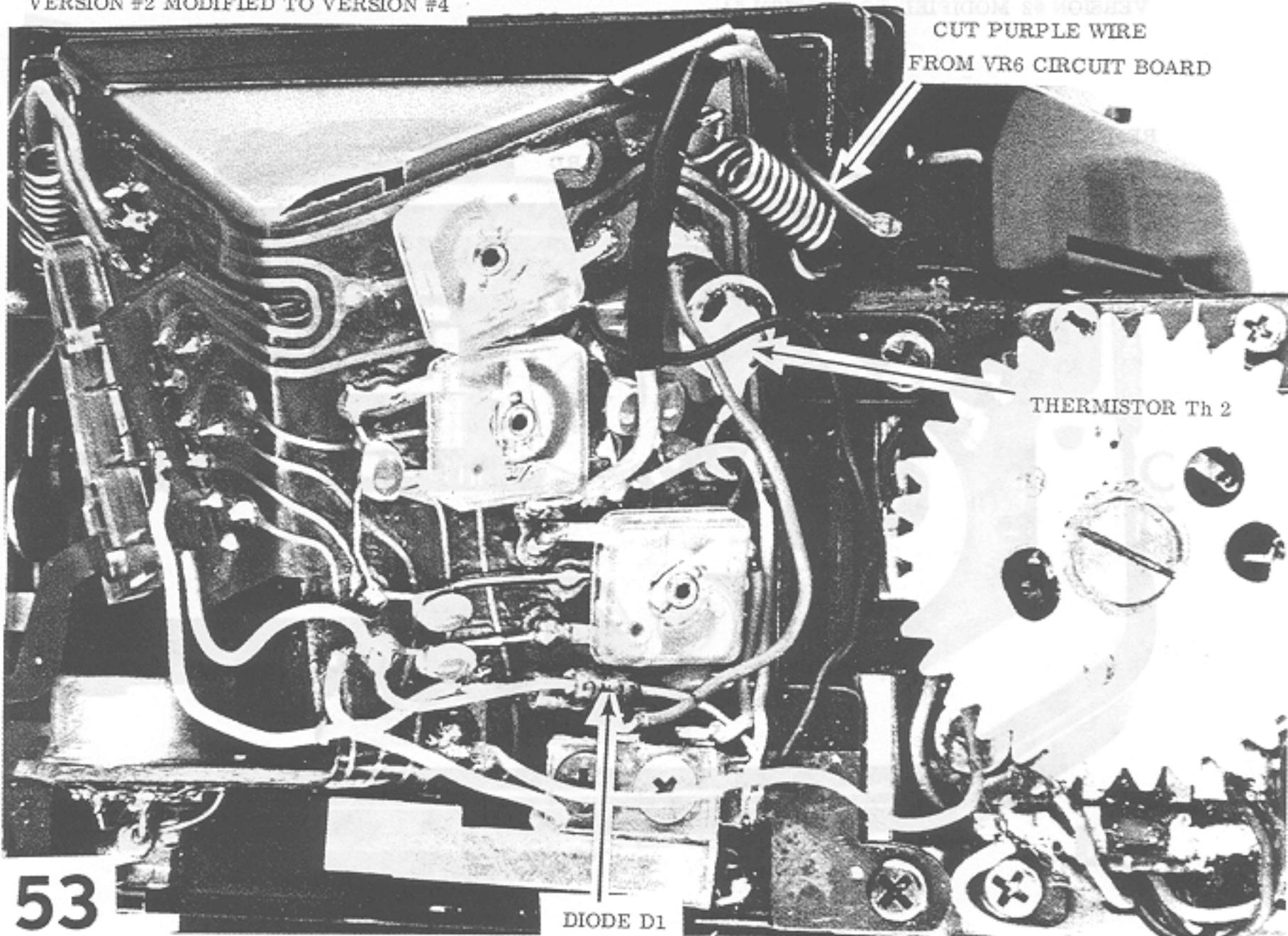
SCHEMATIC, VERSION 3



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VERSION 4

VERSION #2 MODIFIED TO VERSION #4



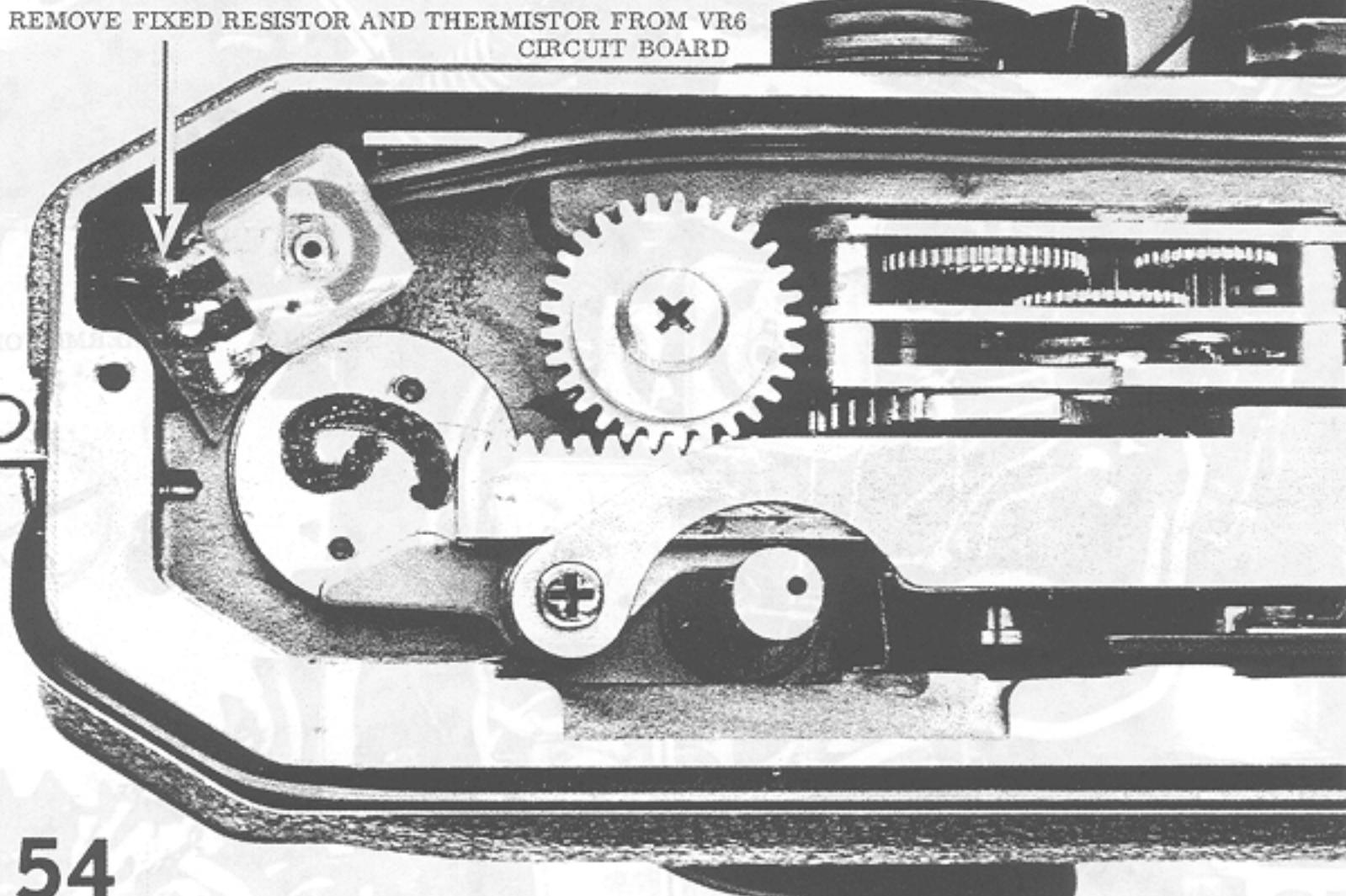
53

Debounce

VERSION #2 MODIFIED TO VERSION #4

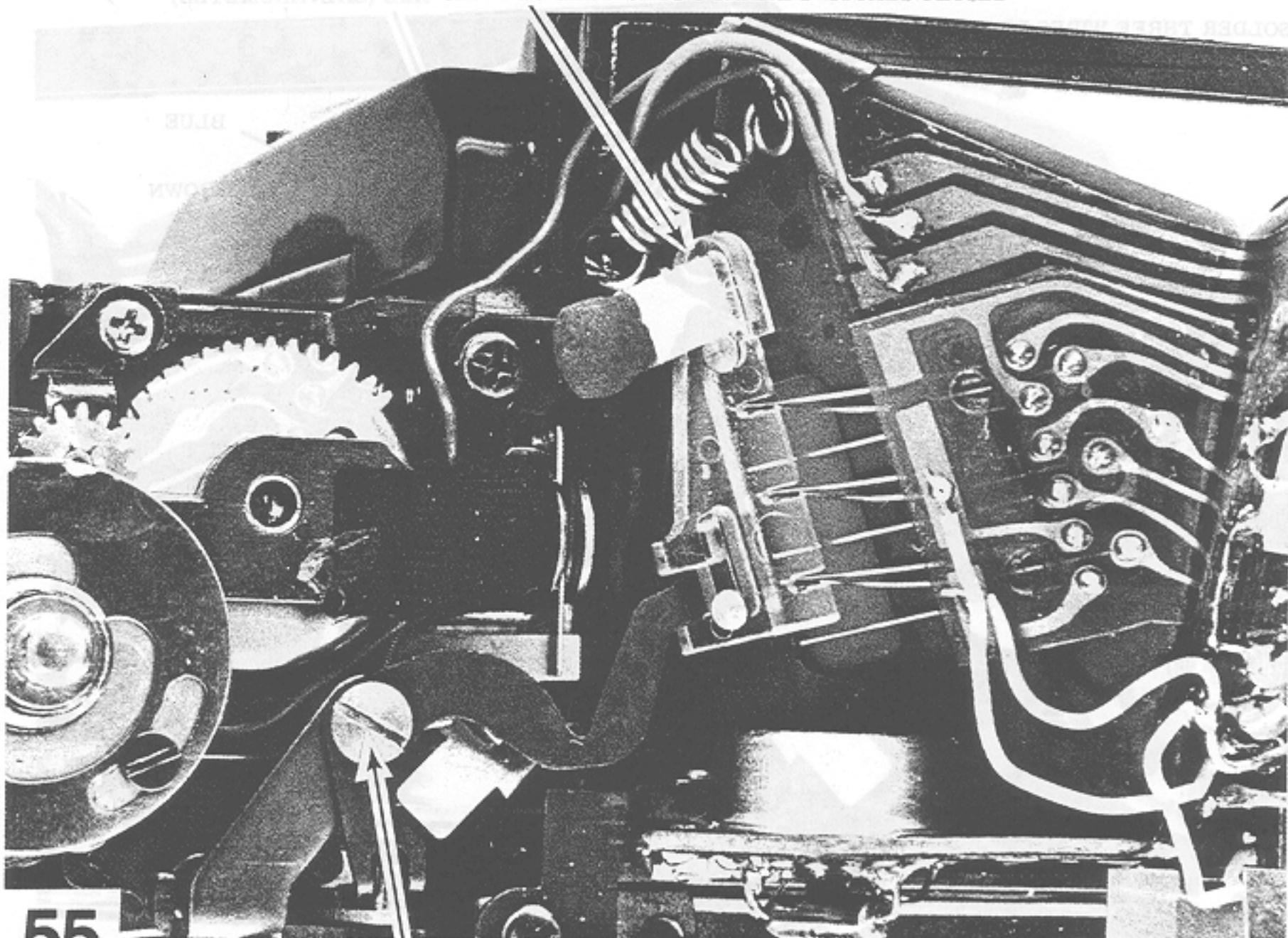
CUT FURTHER IN MIG

REMOVE KEY CIRCUIT BOARD



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1. WEDGE CATS-NORMAL SWITCHING SLIDE TO KEEP CATS-NORMAL SWITCHES CLOSED



55

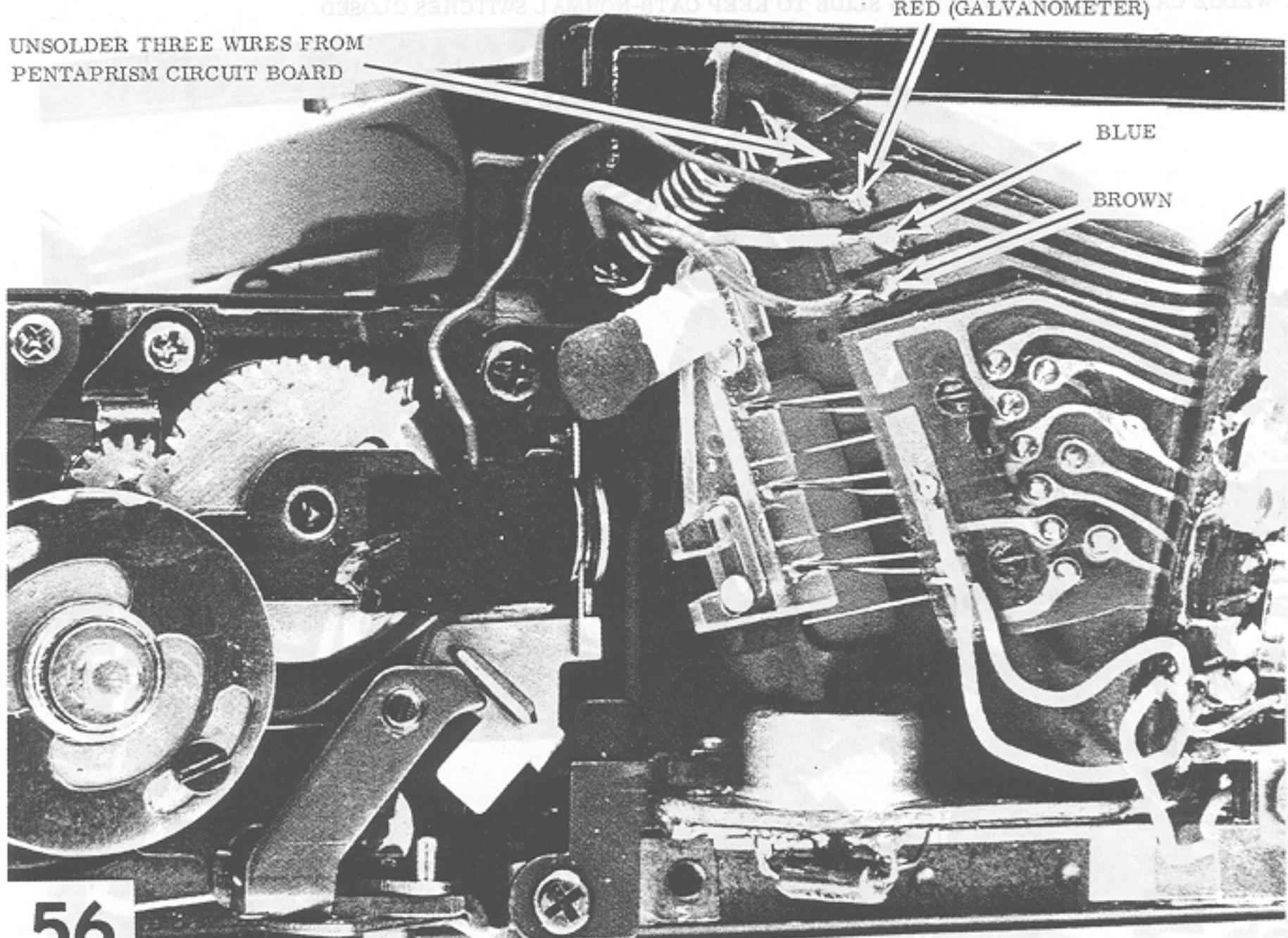
2. REMOVE SHOULDER SCREW AND TAKE OUT CATS-NORMAL SELECTOR LEVER

UNSOGLER THREE WIRES FROM
PENTAPRISM CIRCUIT BOARD

RED (GALVANOMETER) STIDE TO KEEP CATS MAMMALS SUTURES CLOSED

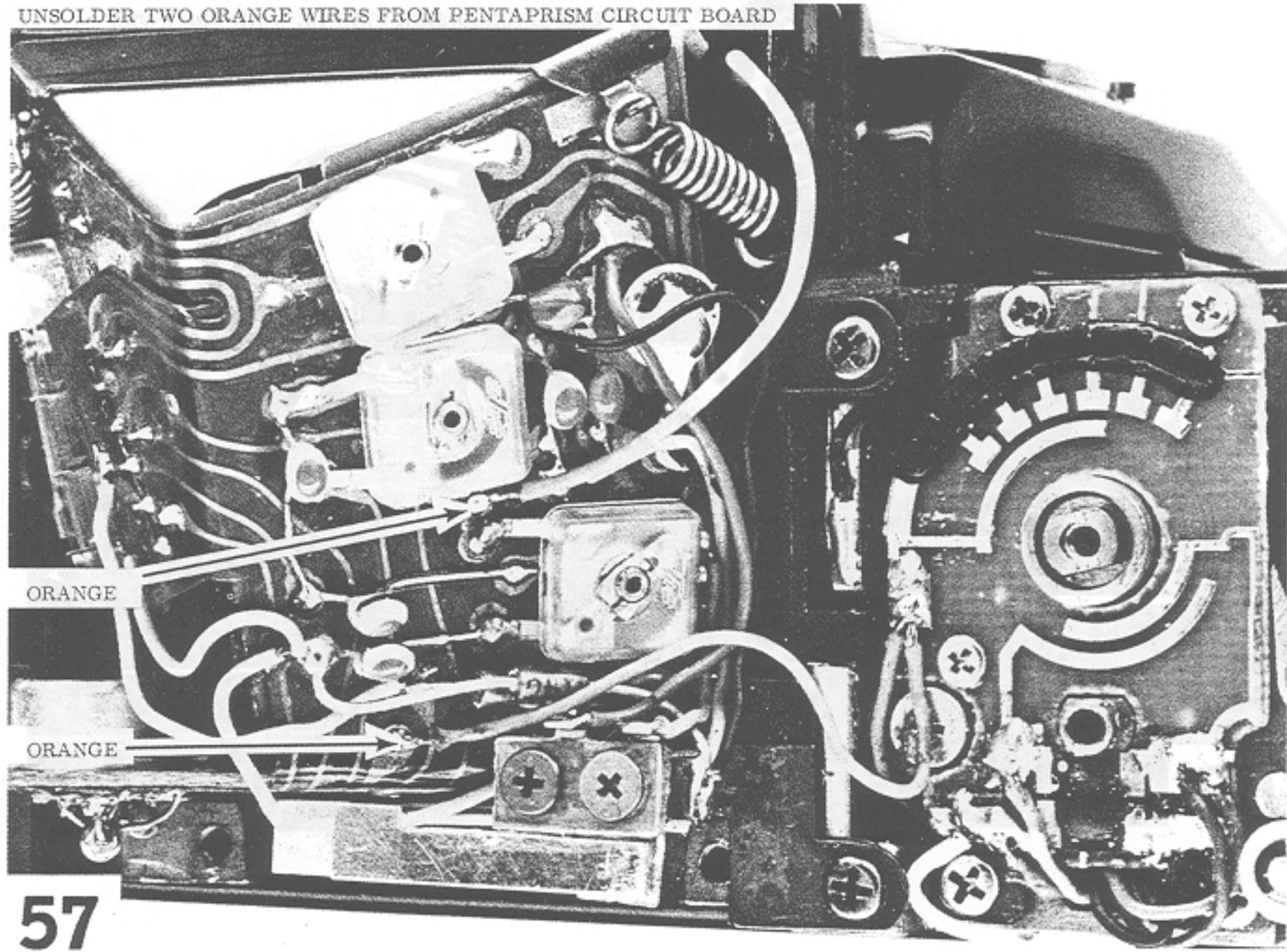
BLUE

S. BROWN

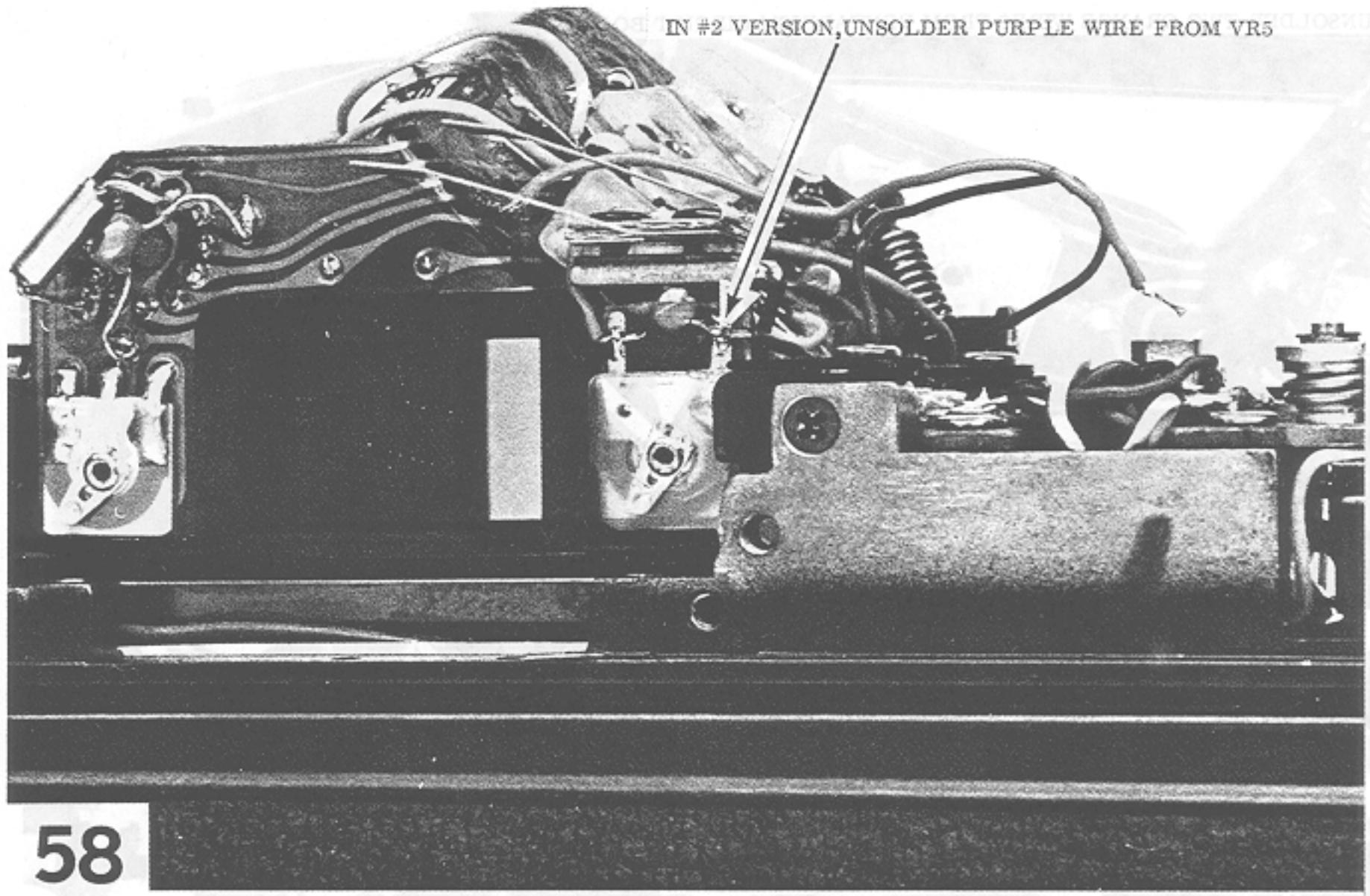


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UNSOLDER TWO ORANGE WIRES FROM PENTAPRISM CIRCUIT BOARD



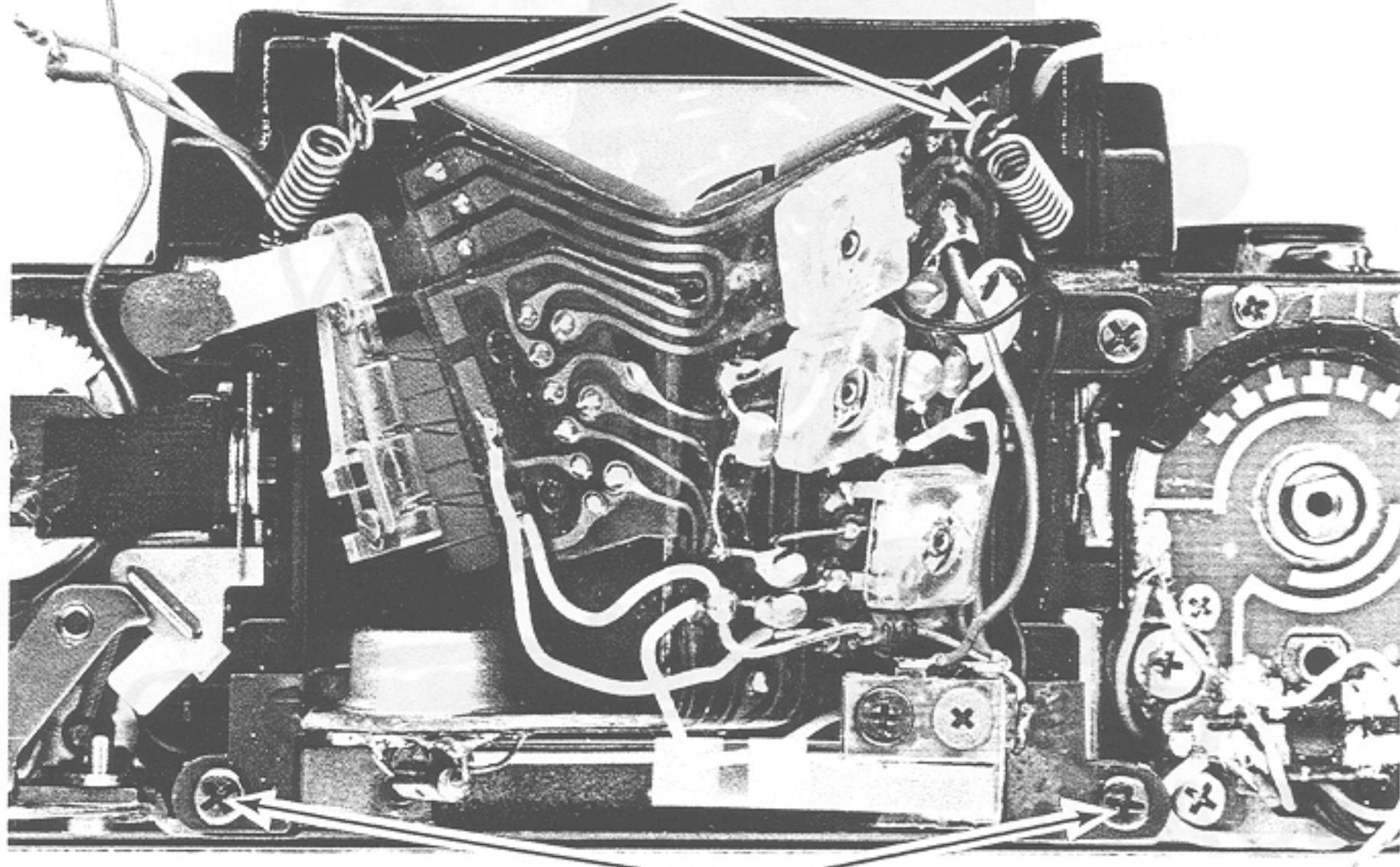
IN #2 VERSION, UNSOLDER PURPLE WIRE FROM VR5



58

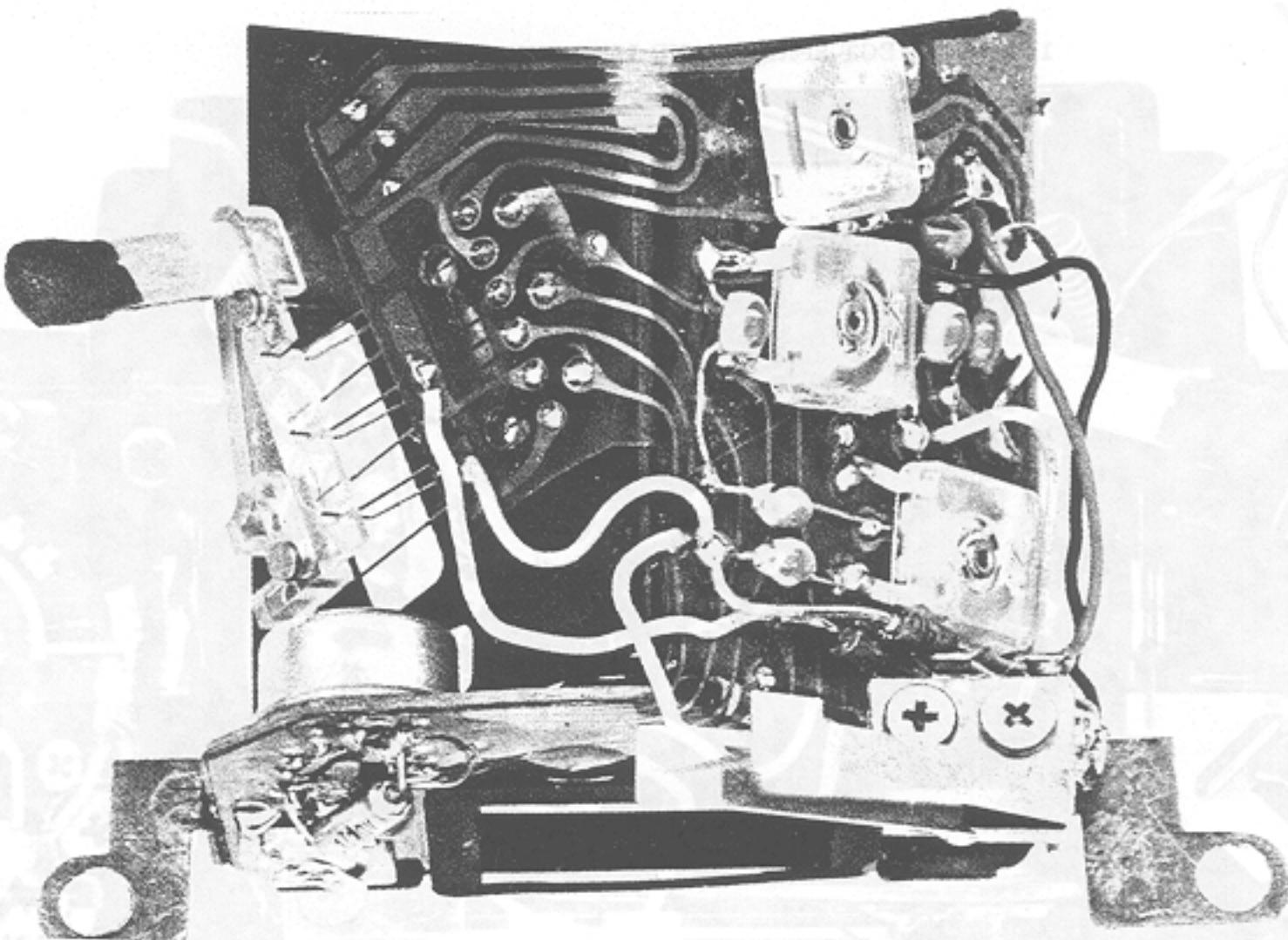
TO REMOVE PENTAPRISM CIRCUIT BOARD: REV. GRADE TWO MINIATURE

1. DISCONNECT SPRINGS AND LIFT OFF PRISM RETAINER



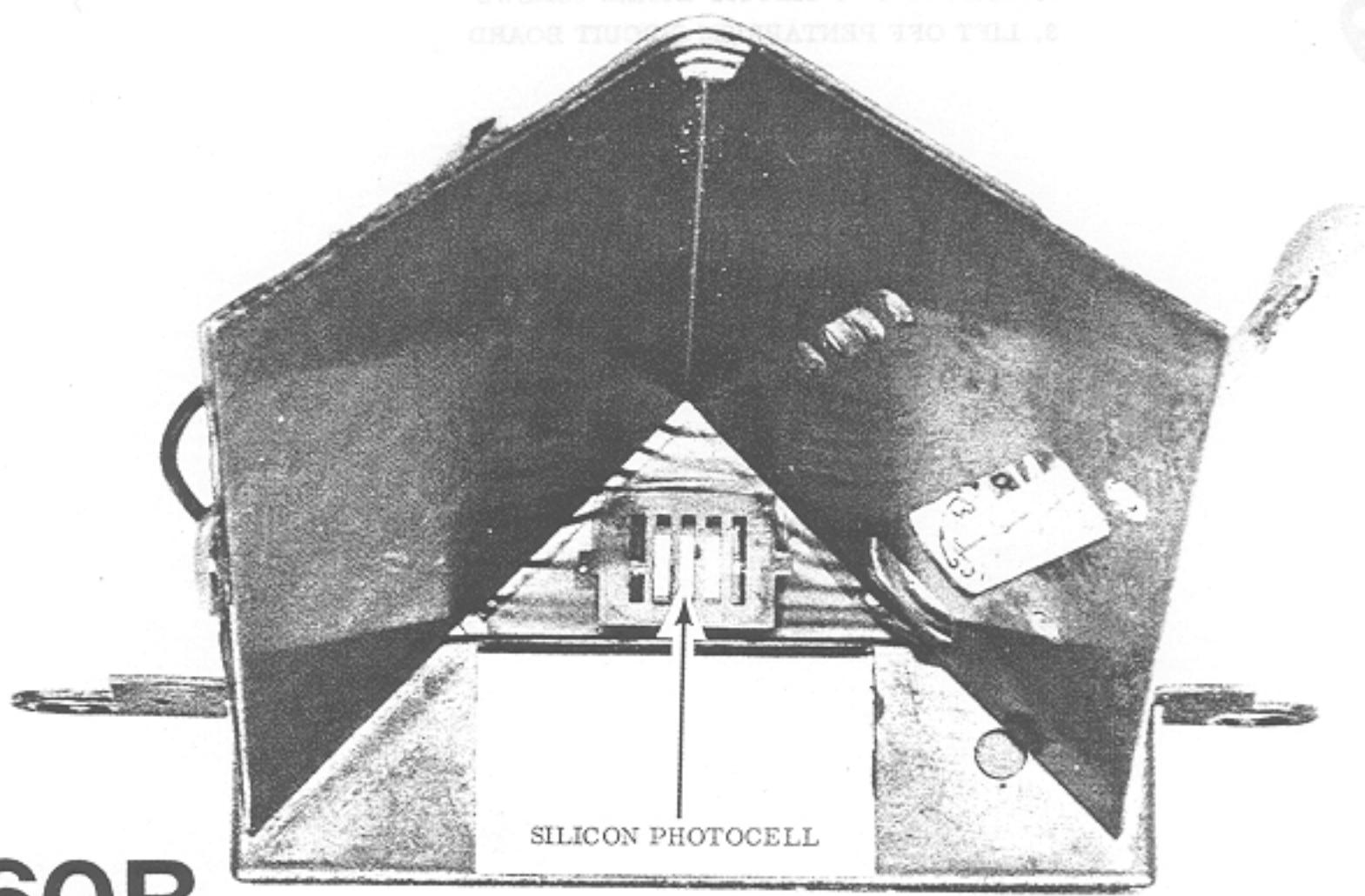
2. REMOVE TWO CIRCUIT-BOARD SCREWS
3. LIFT OFF PENTAPRISM CIRCUIT BOARD

PENTAPRISM CIRCUIT BOARD (VERSION #4)



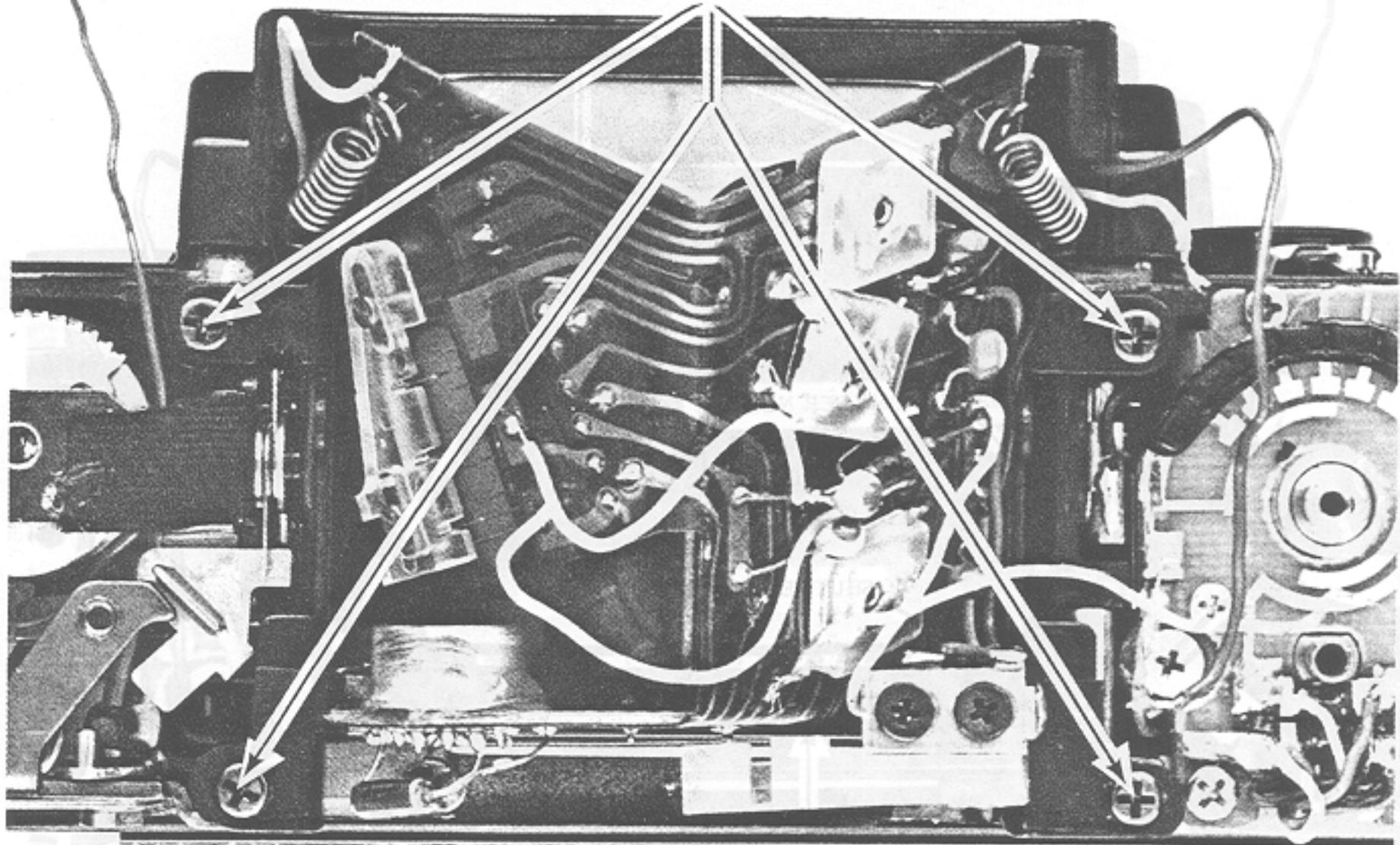
60A

1. REMOVE TWO SCREWS
2. TILT OUT PENTAPRISM

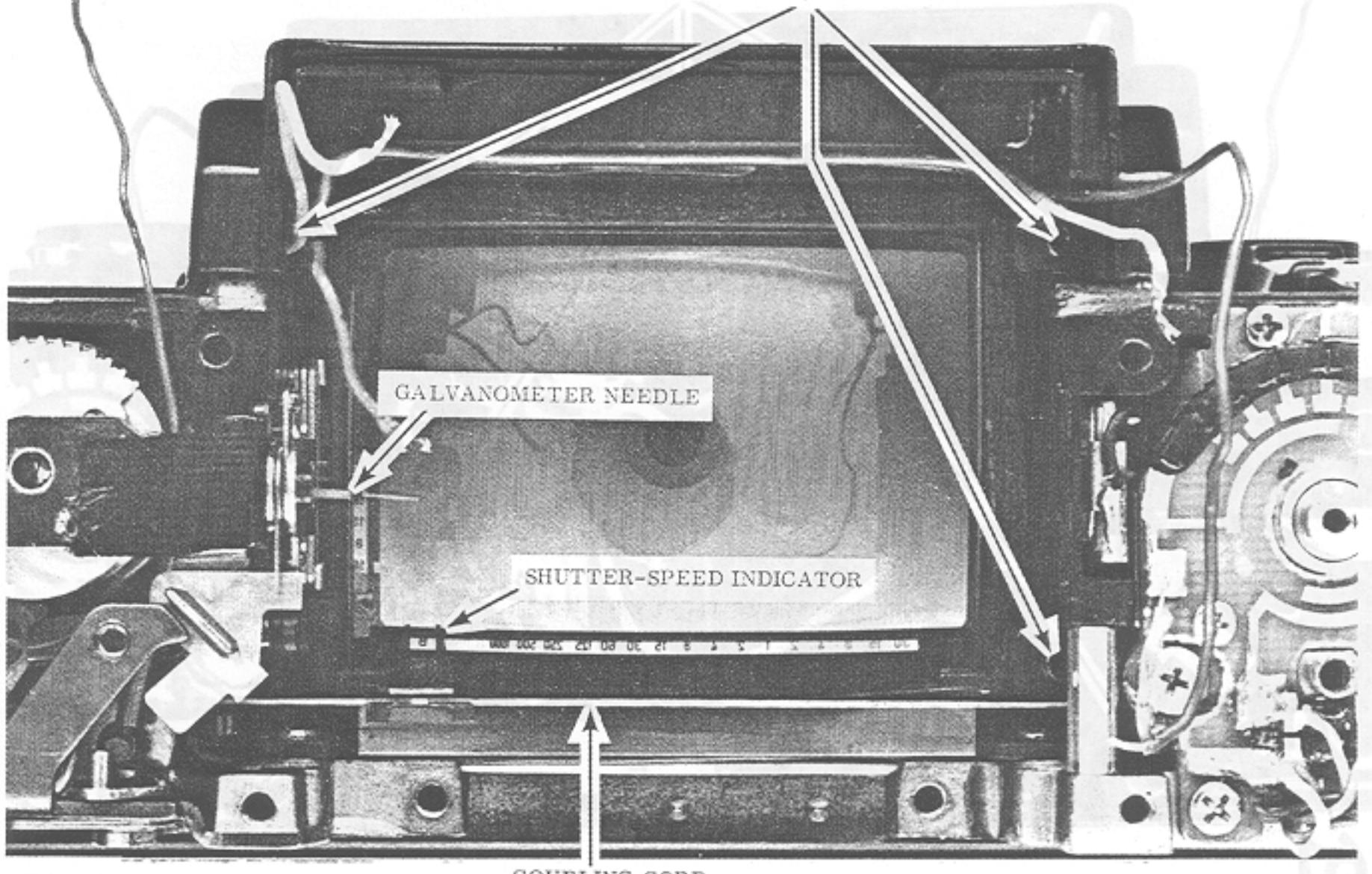


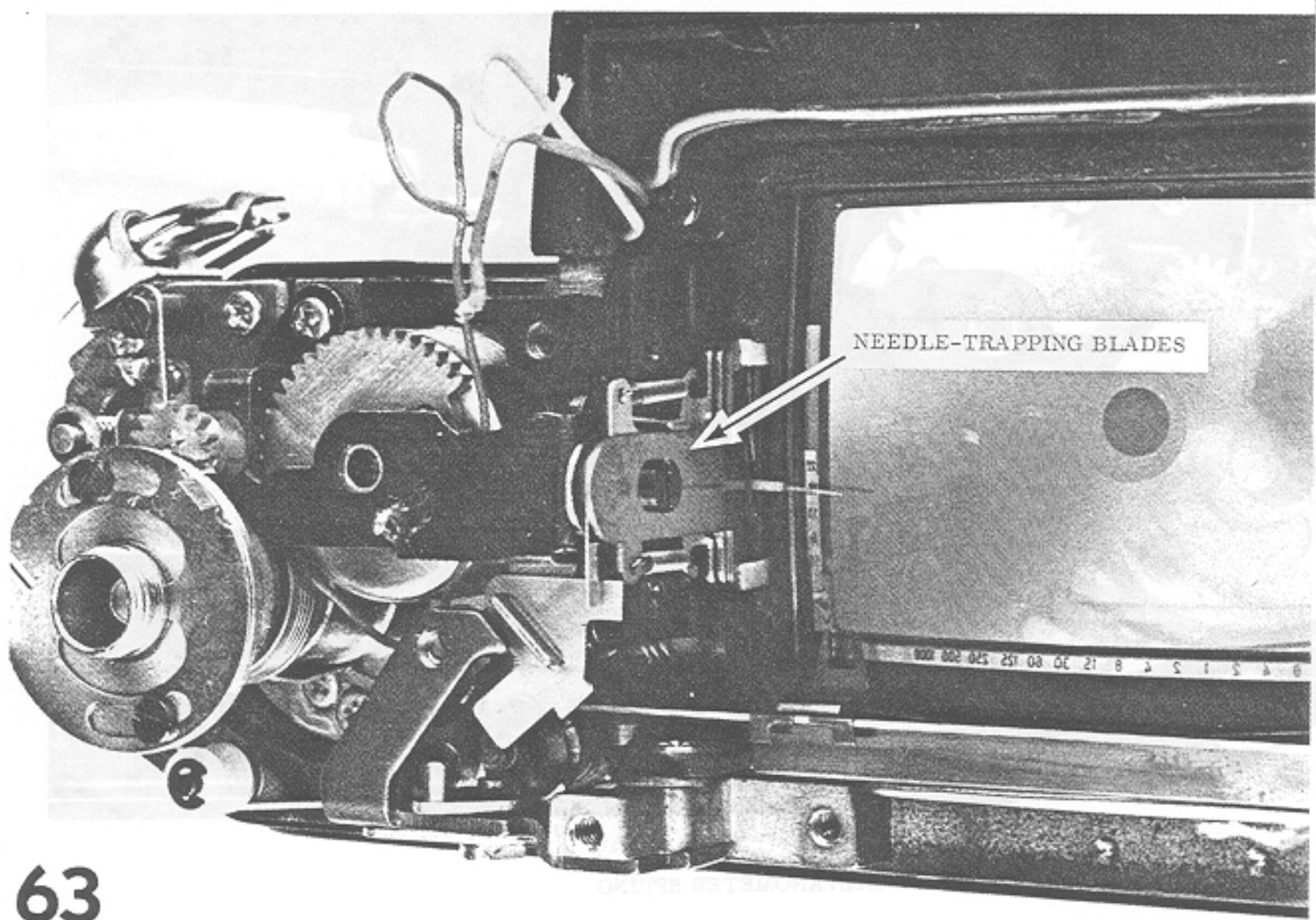
60B

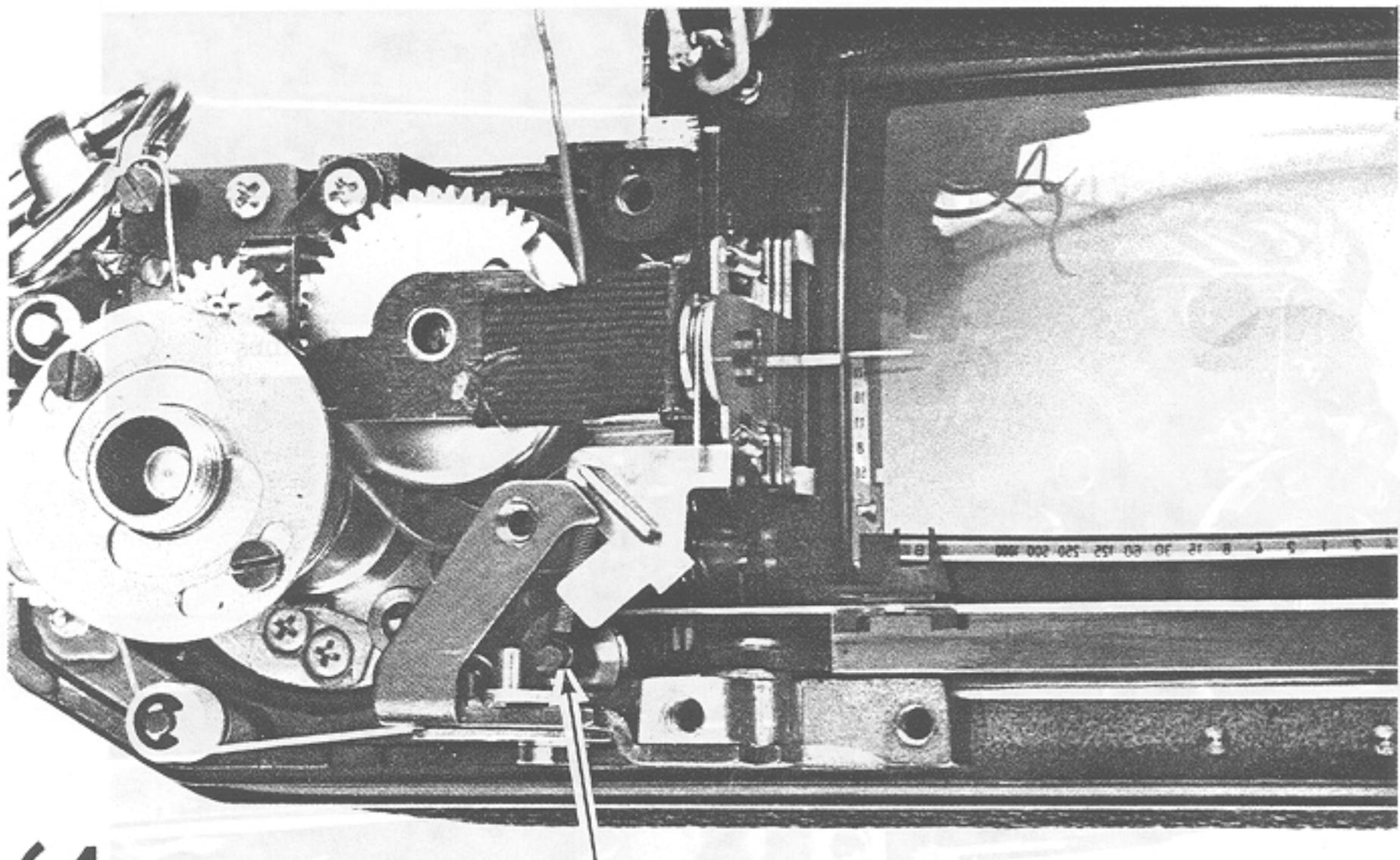
TO REMOVE COMPLETE PENTAPRISM UNIT, TAKE OUT FOUR SCREWS



TAKE OUT FOCUSING-SCREEN ADJUSTING SCREWS

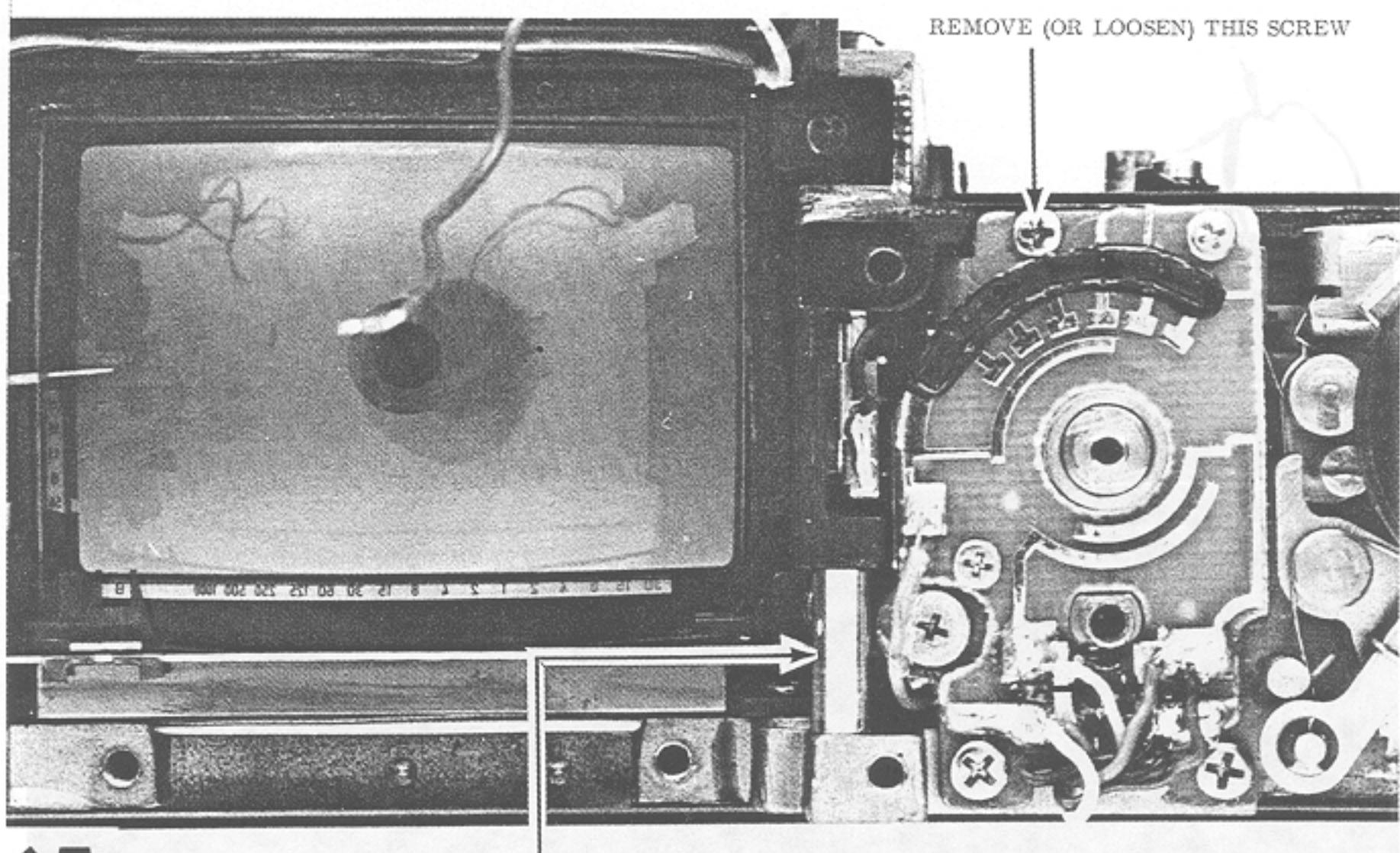






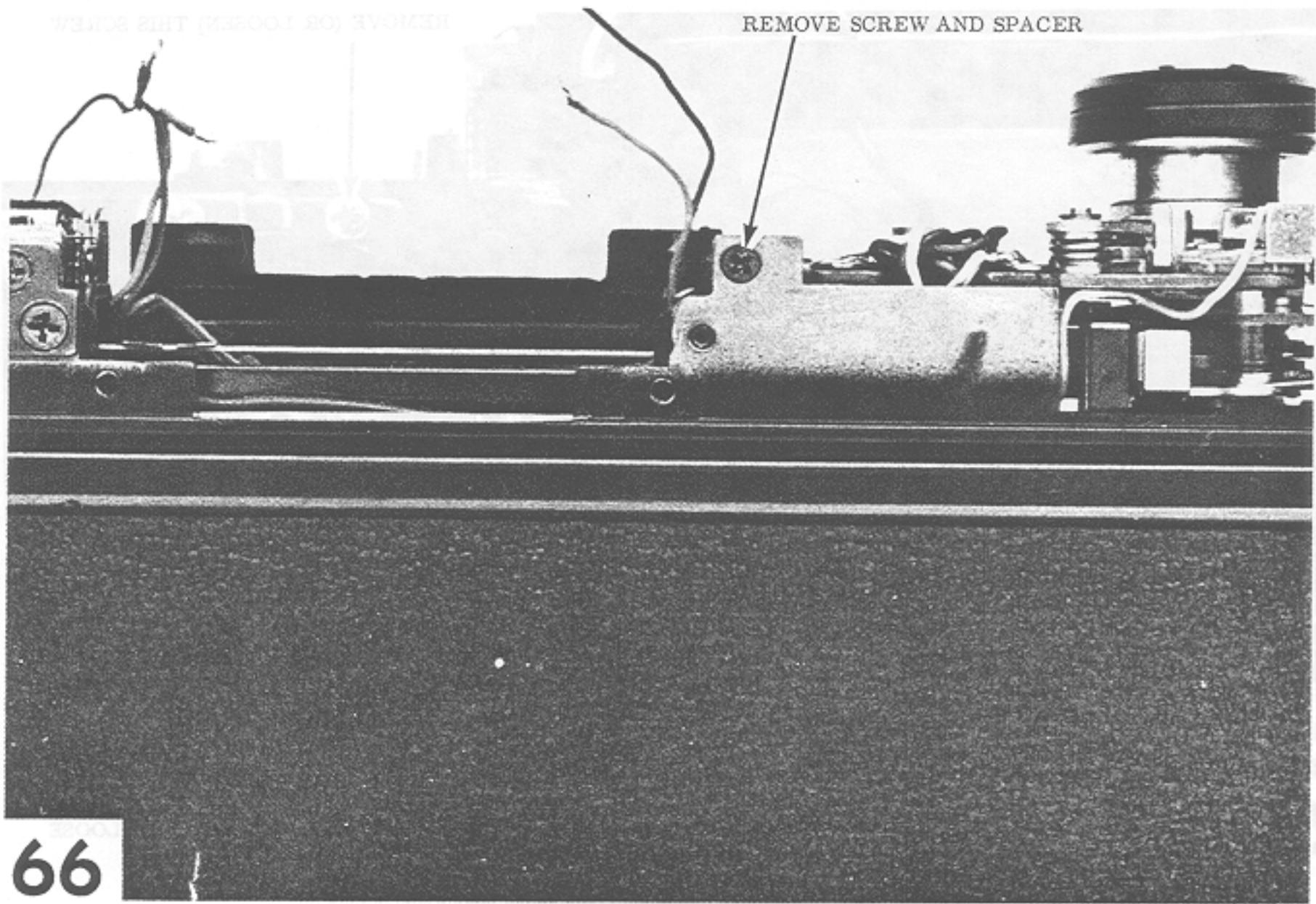
64

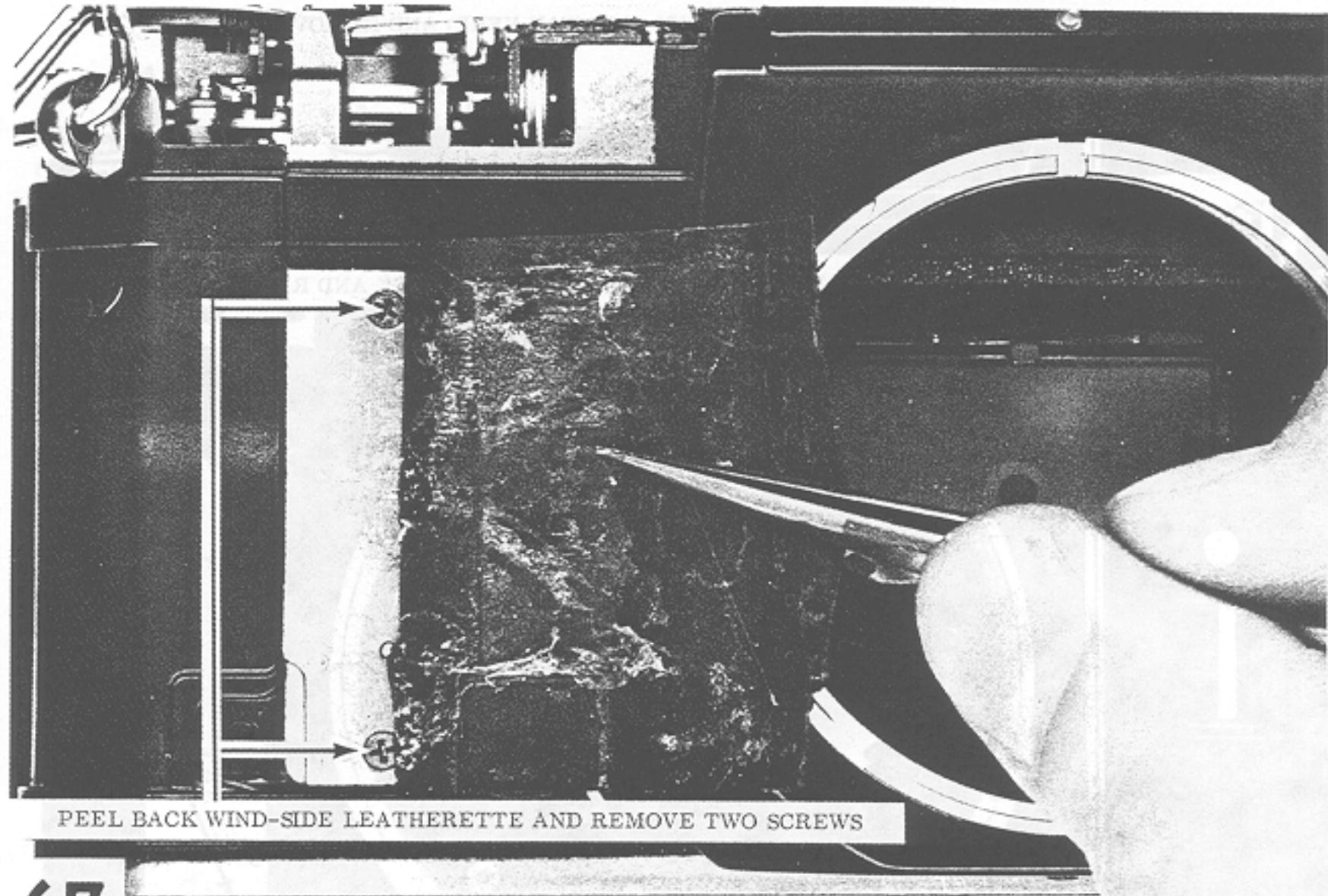
DISCONNECT GALVANOMETER SPRING



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NOTE SPACER BETWEEN MIRROR CAGE AND CAMERA BODY -- SPACER WILL BE LOOSE WHEN YOU REMOVE THE SCREW SHOWN IN THE NEXT ILLUSTRATION





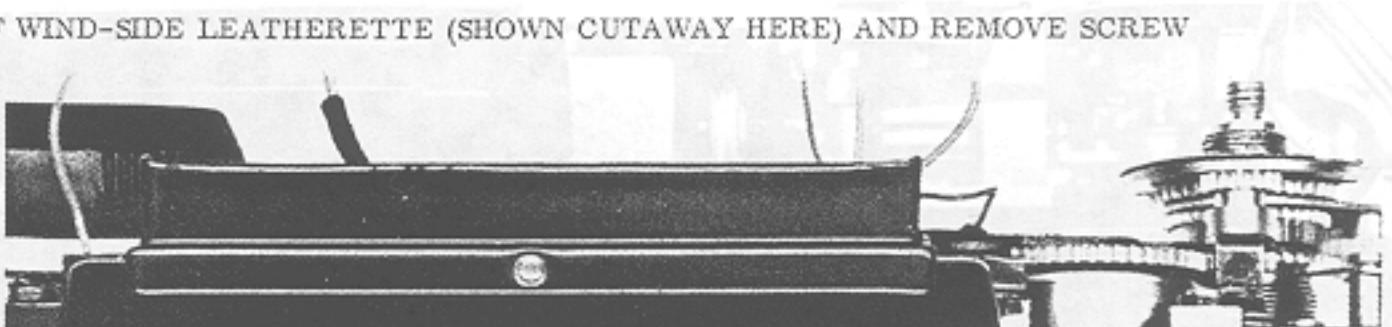
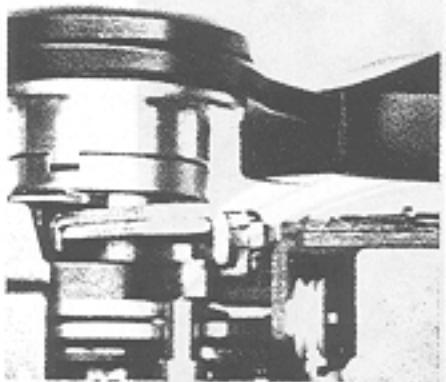
PEEL BACK WIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS

67

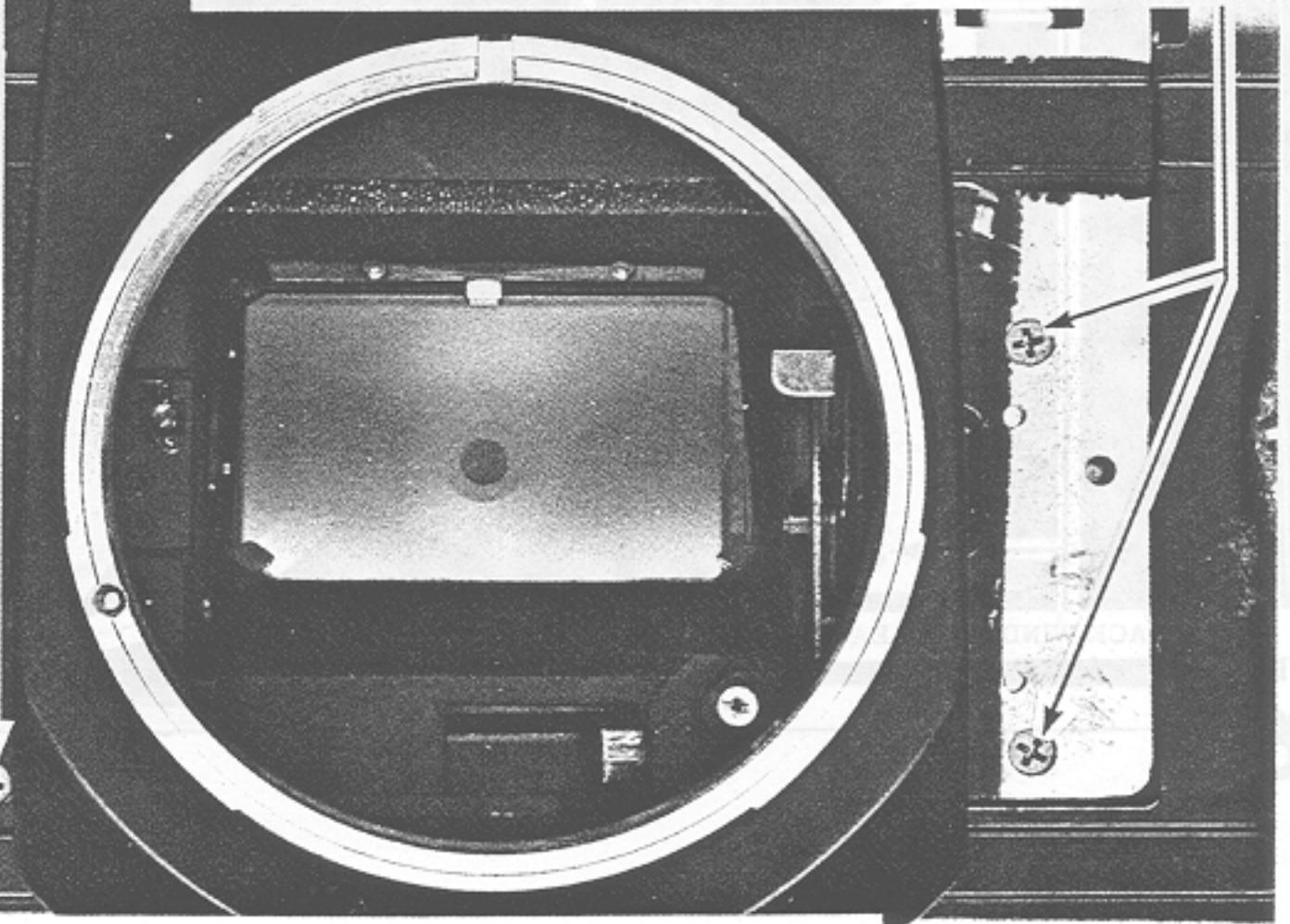
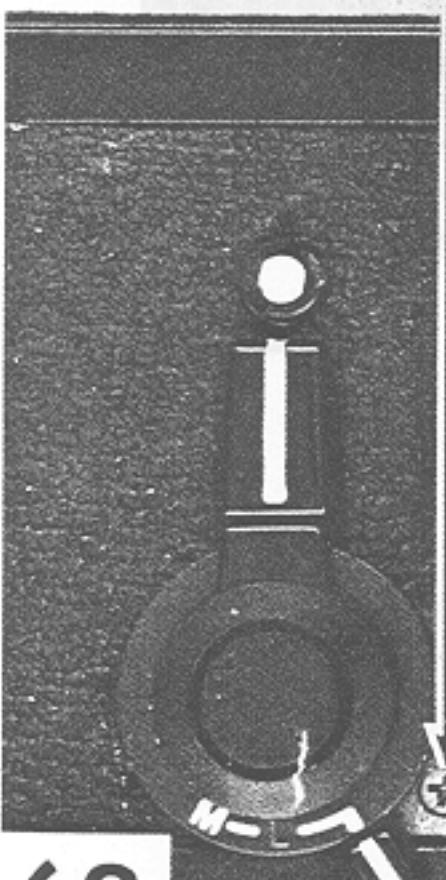
YAMAHA ROAD-RUNNER STAINLESS STEEL TUBE

86

1. PEEL BACK CORNER OF WIND-SIDE LEATHERETTE (SHOWN CUTAWAY HERE) AND REMOVE SCREW



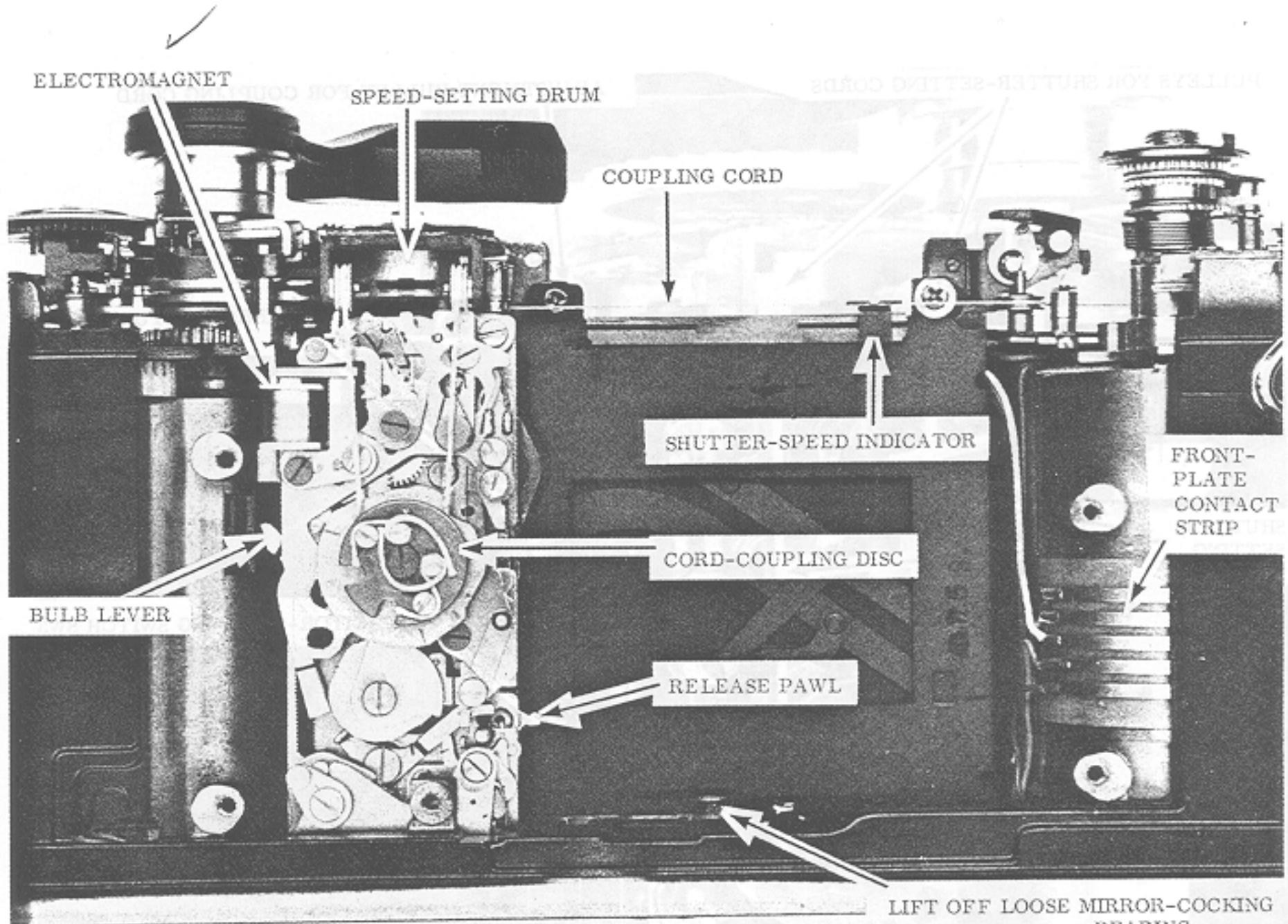
2. PEEL BACK REWIND-SIDE LEATHERETTE AND REMOVE TWO SCREWS



3. LIFT OUT FRONT-PLATE/MIRROR-CAGE ASSEMBLY

68

Shutter can be released when replacing front plate



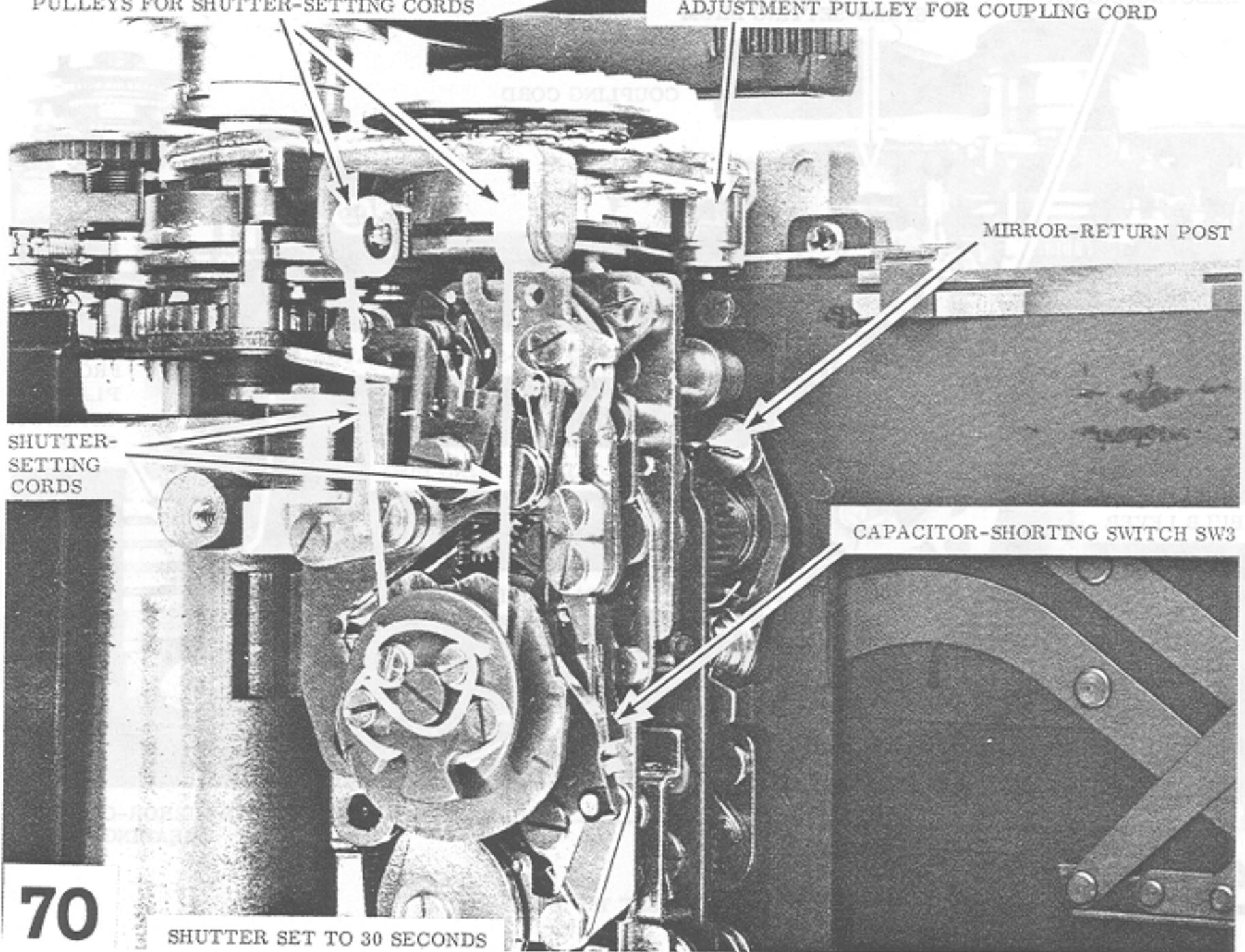
69

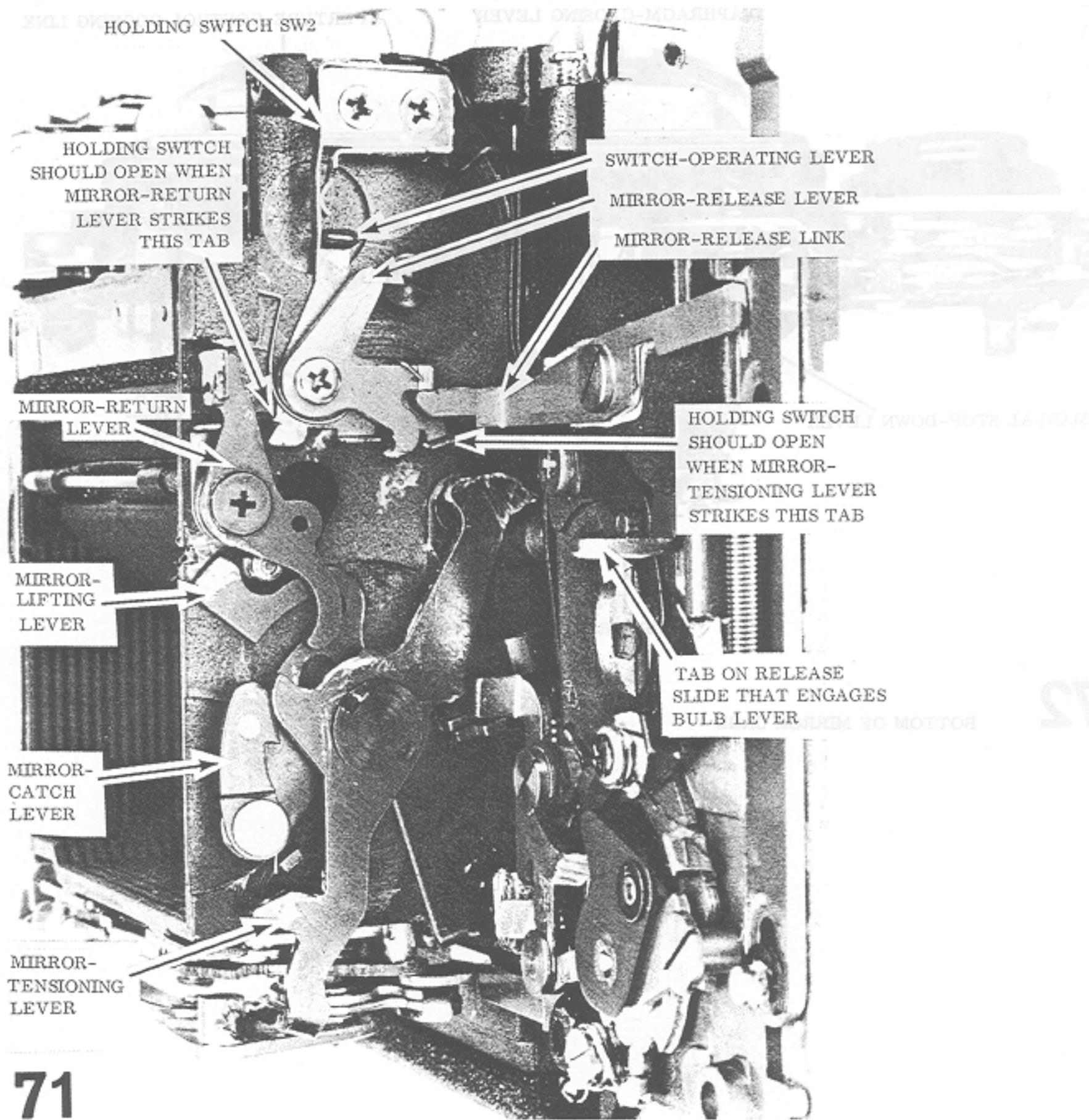
SHUTTER SET TO "BULB"

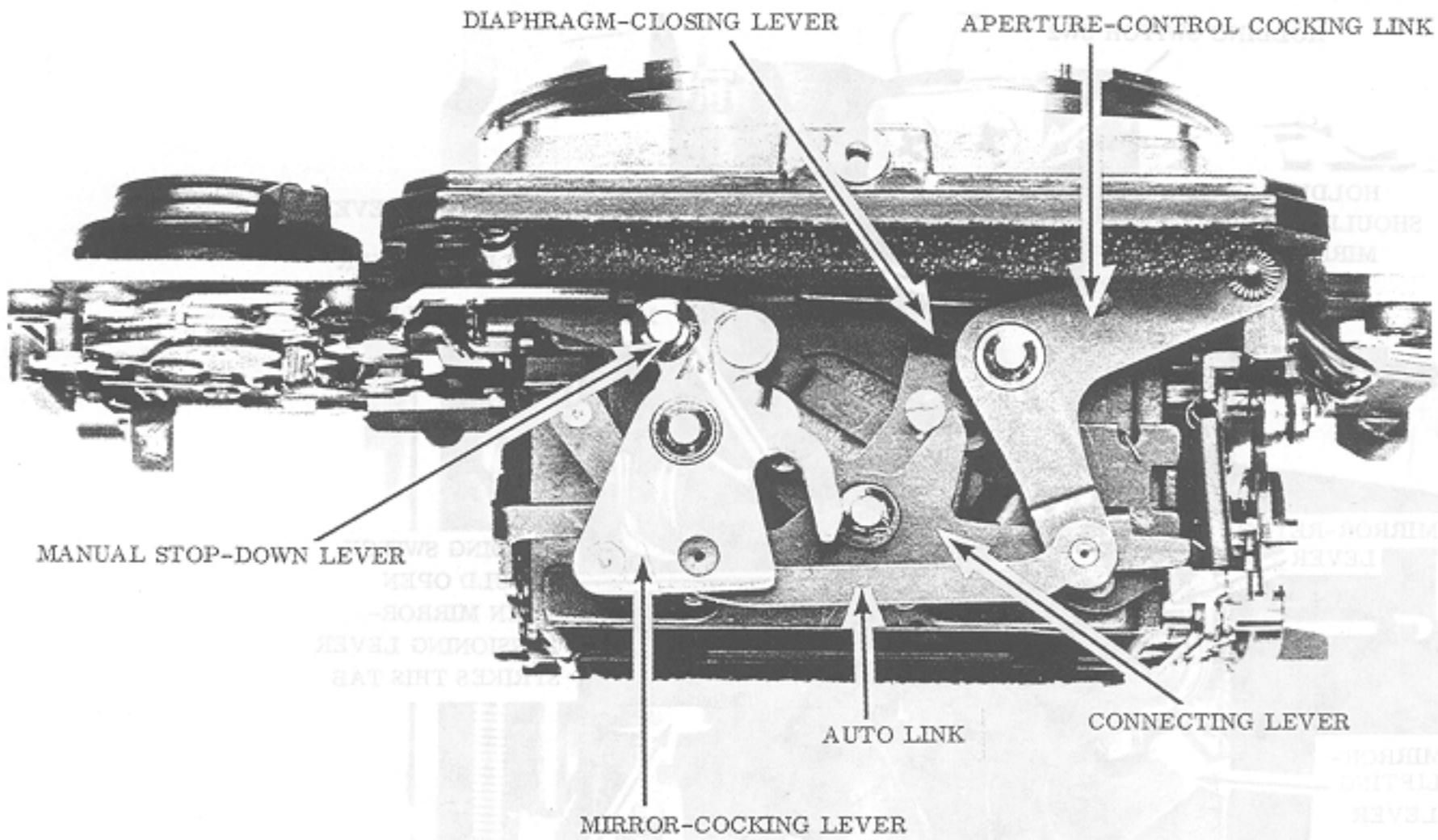
Check for stuck electromagnet if shutter is open

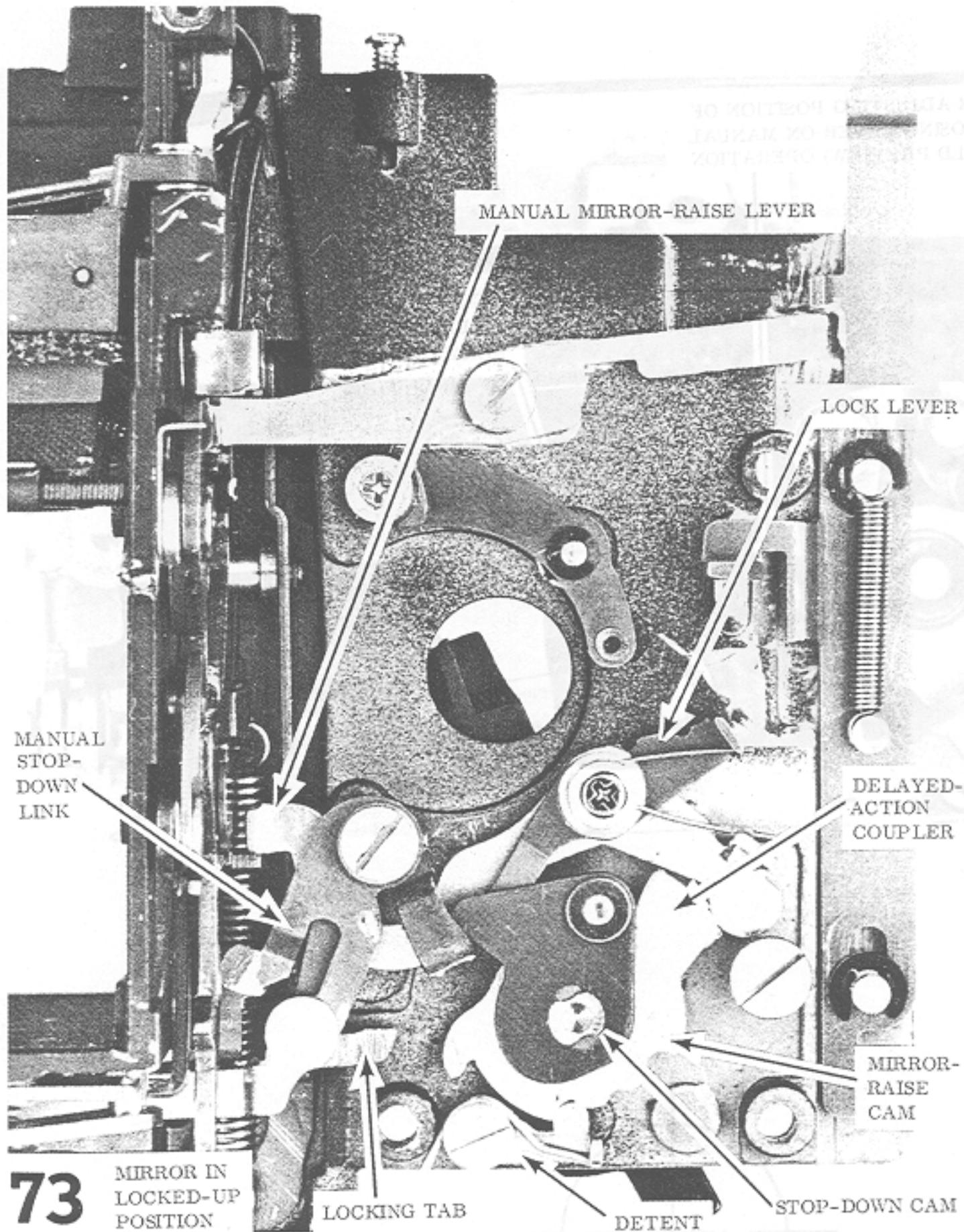
PULLEYS FOR SHUTTER-SETTING CORDS

ADJUSTMENT PULLEY FOR COUPLING CORD





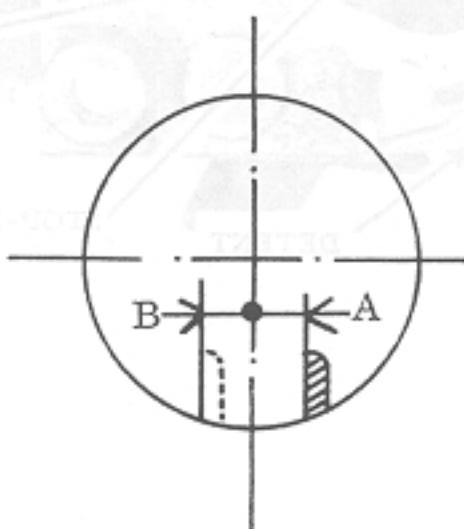




ECCENTRIC FOR ADJUSTING POSITION OF
DIAPHRAGM-CLOSING LEVER ON MANUAL
(DEPTH-OF-FIELD PREVIEW) OPERATION

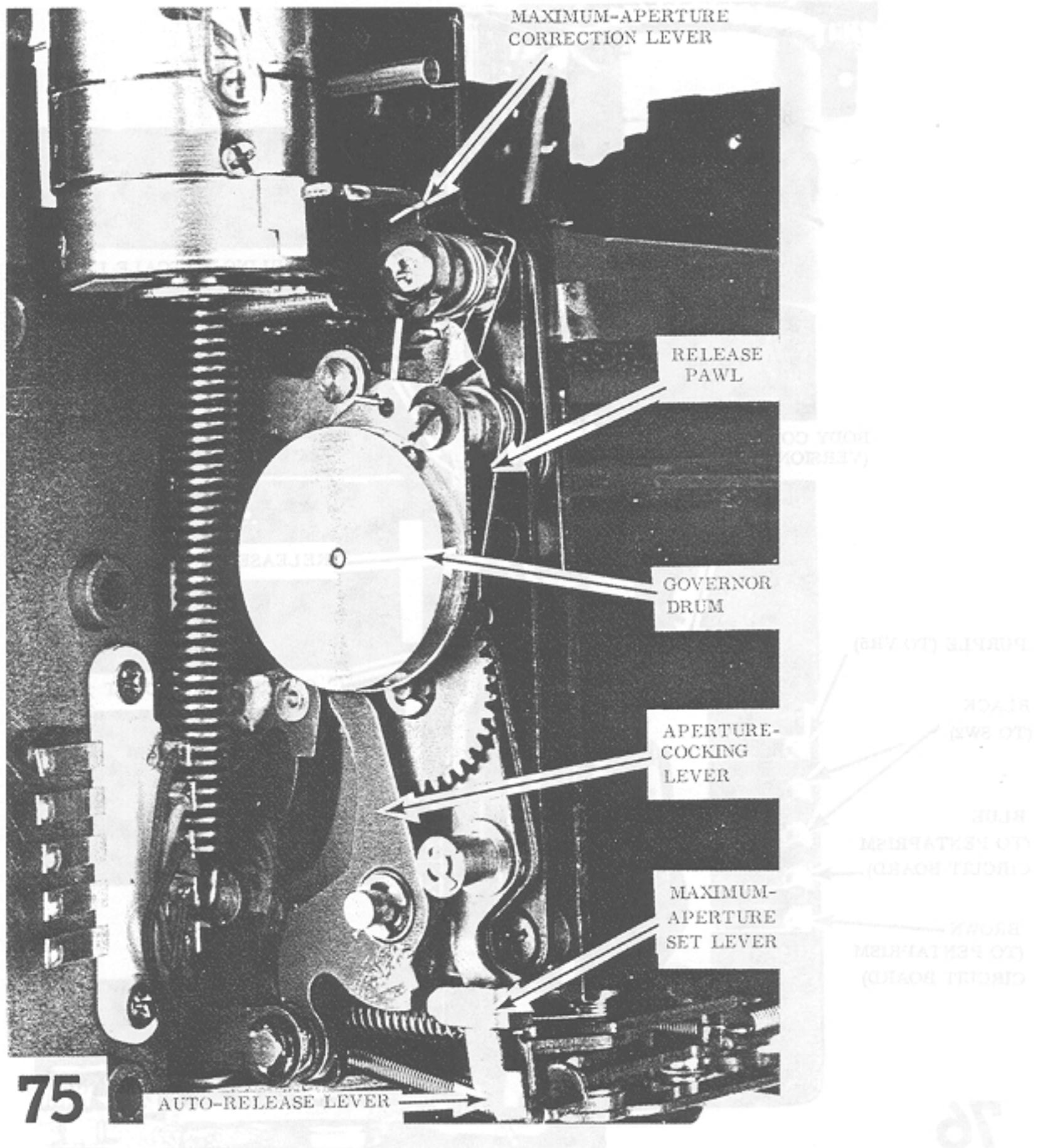
ECCENTRIC FOR ADJUSTING POSITION
OF DIAPHRAGM-CLOSING LEVER ON
NORMAL OPERATION

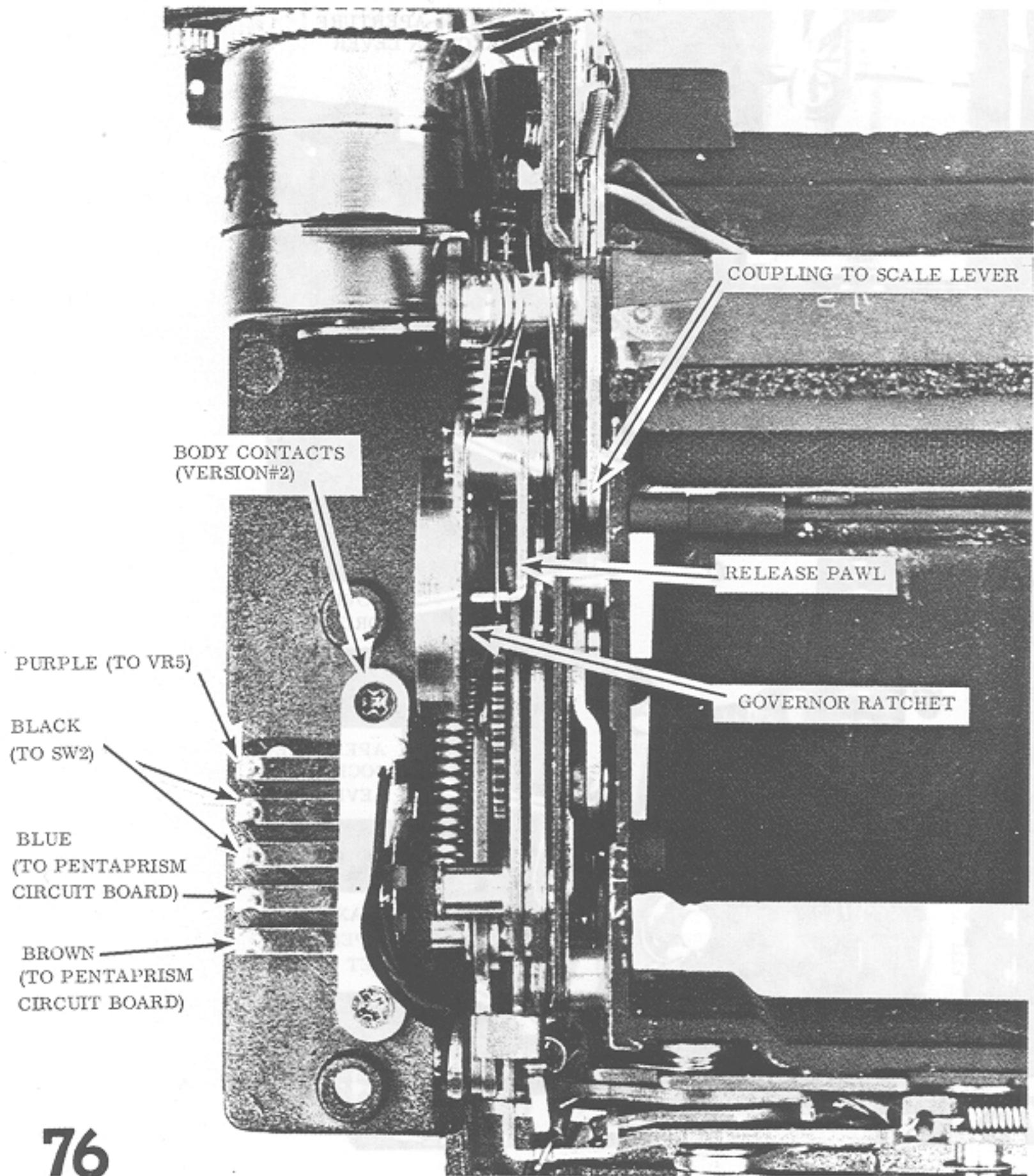
74

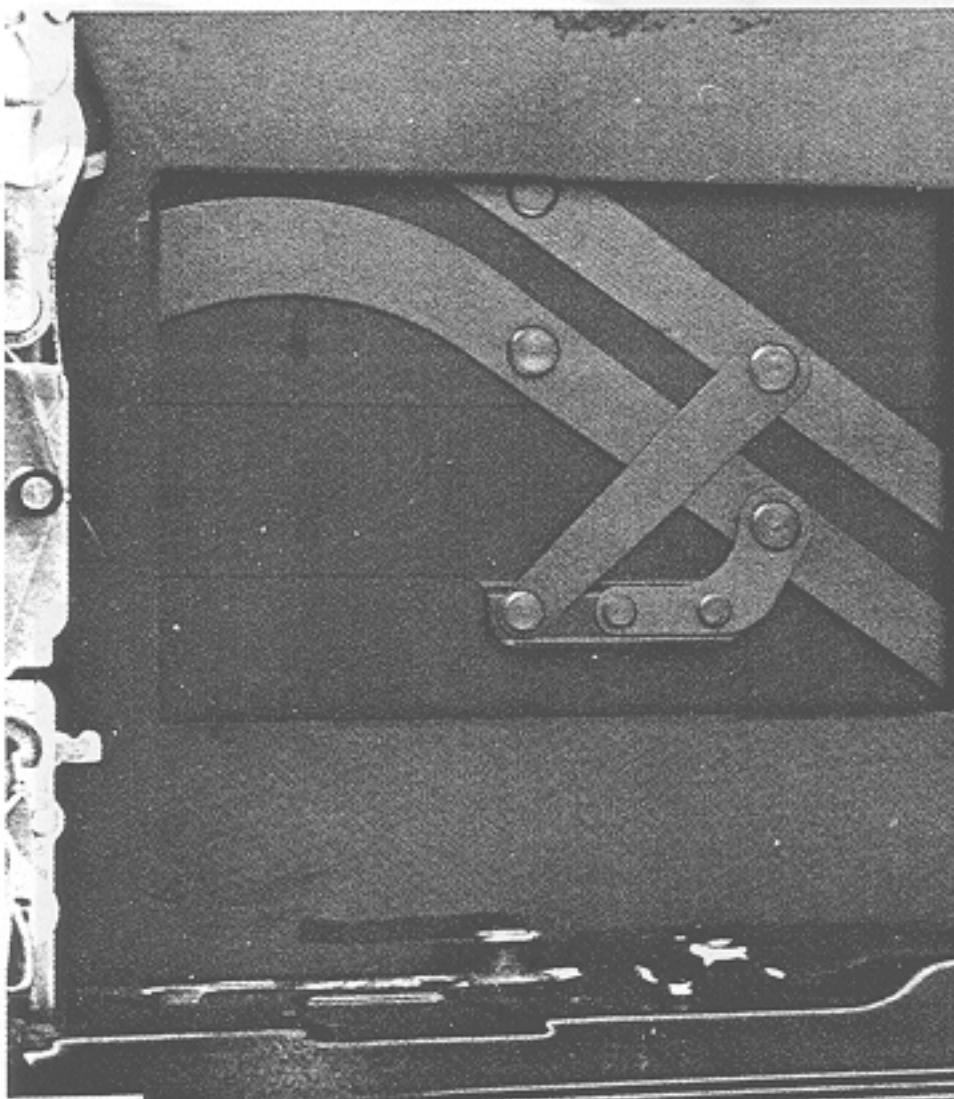


A = more than 5.5 mm

B = 1.8 — 3.2 mm

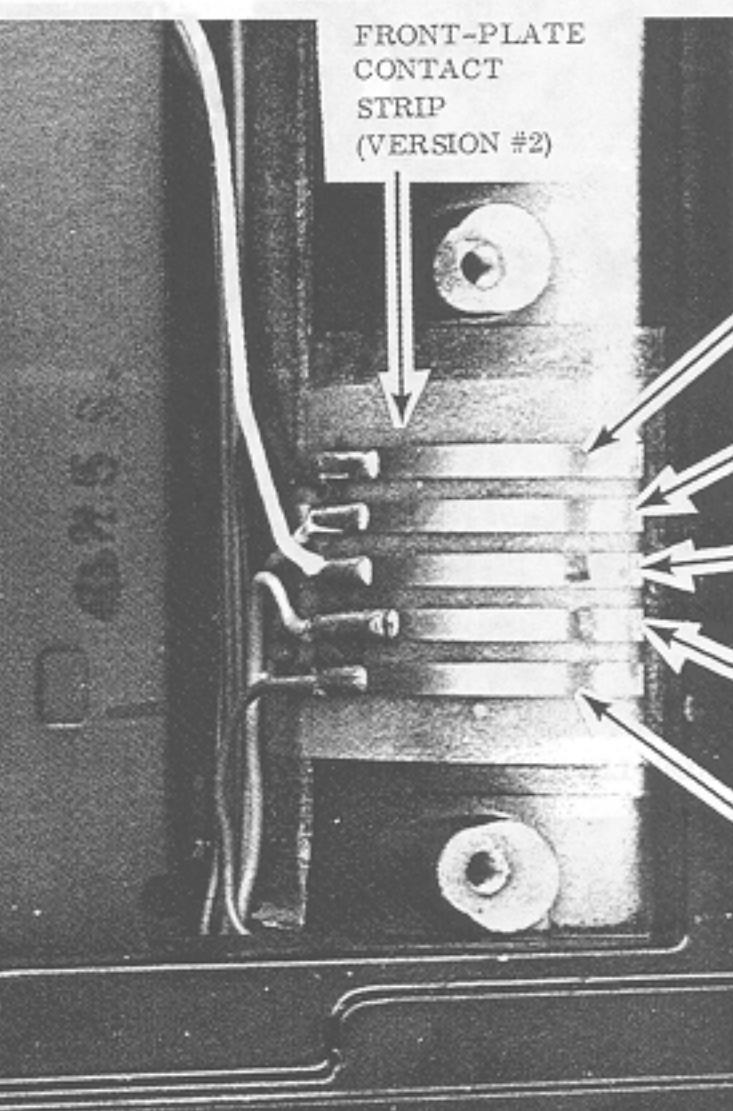






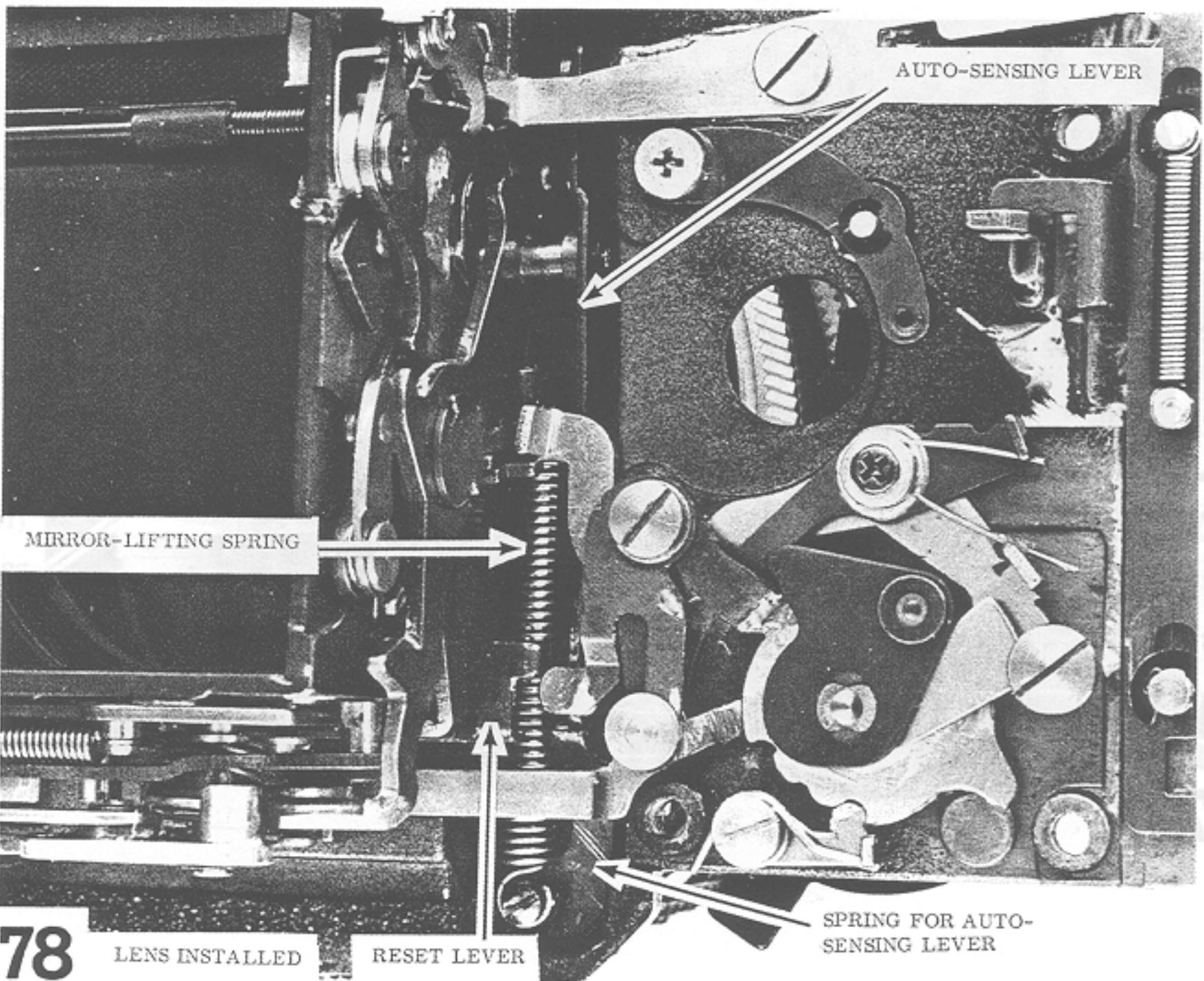
77

SWINGING LEVER
SUSPENSION FOR AUTO



INITIALIZE
RESET LEVER

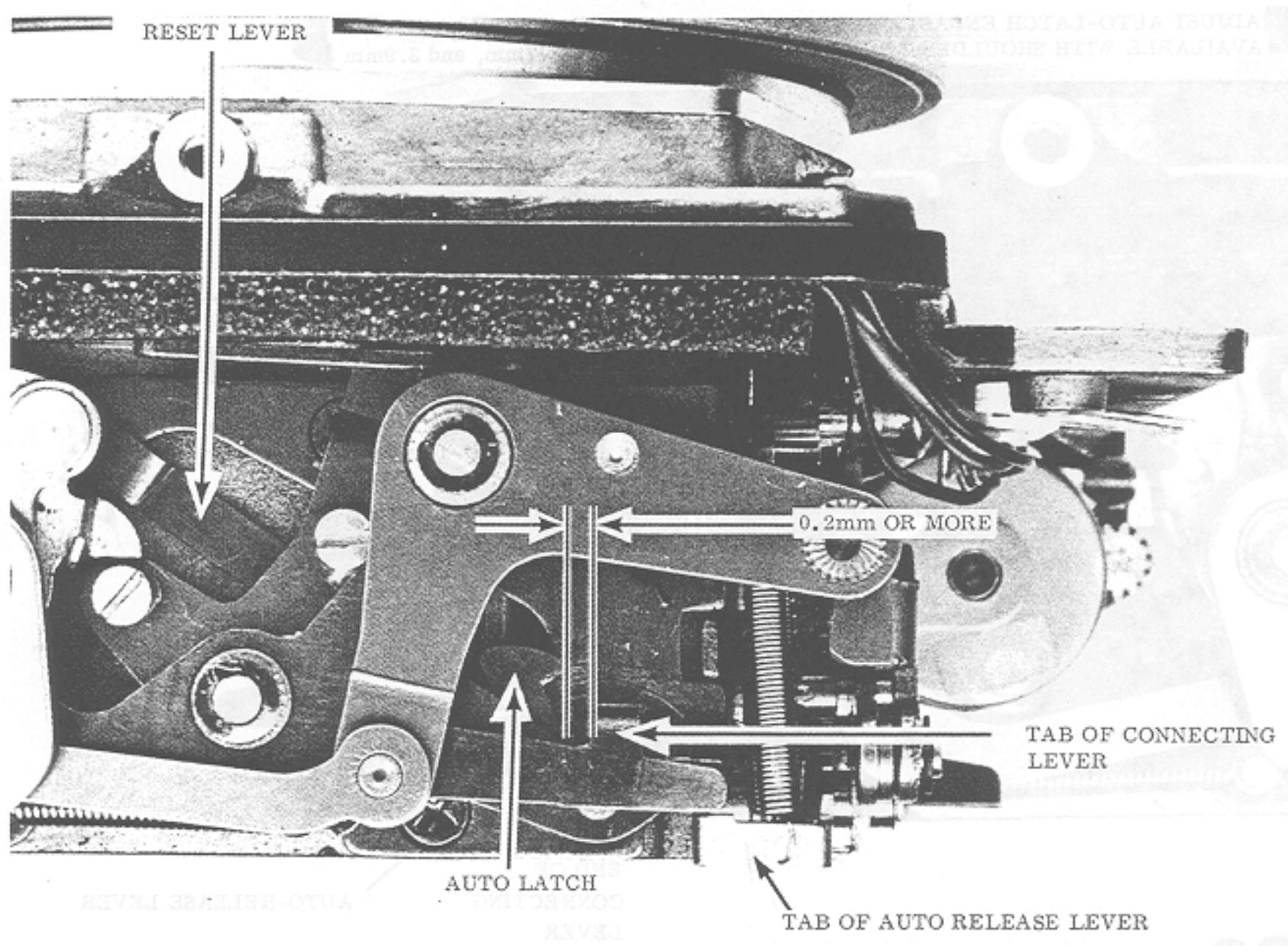
87



78

LENS INSTALLED

RESET LEVER

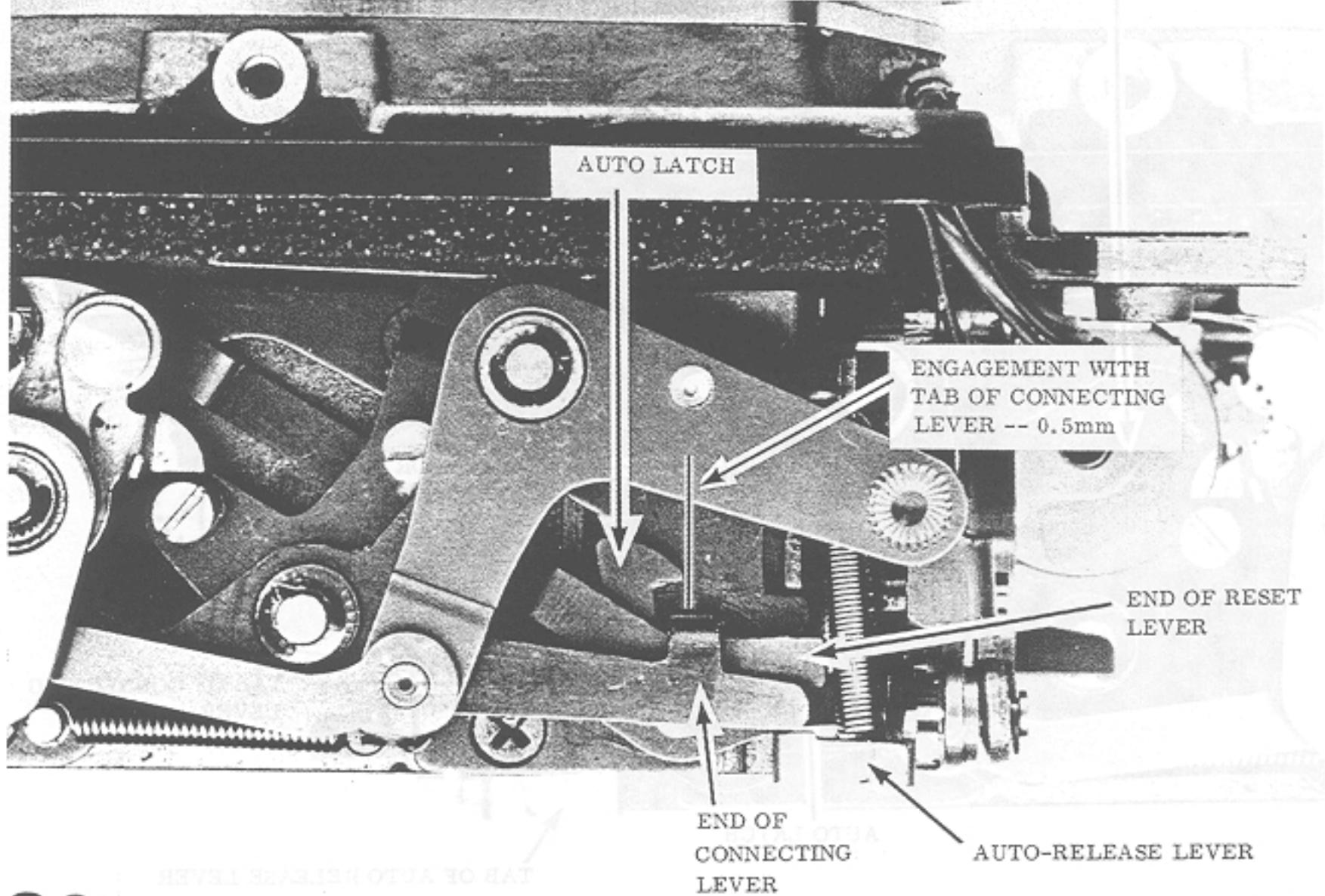


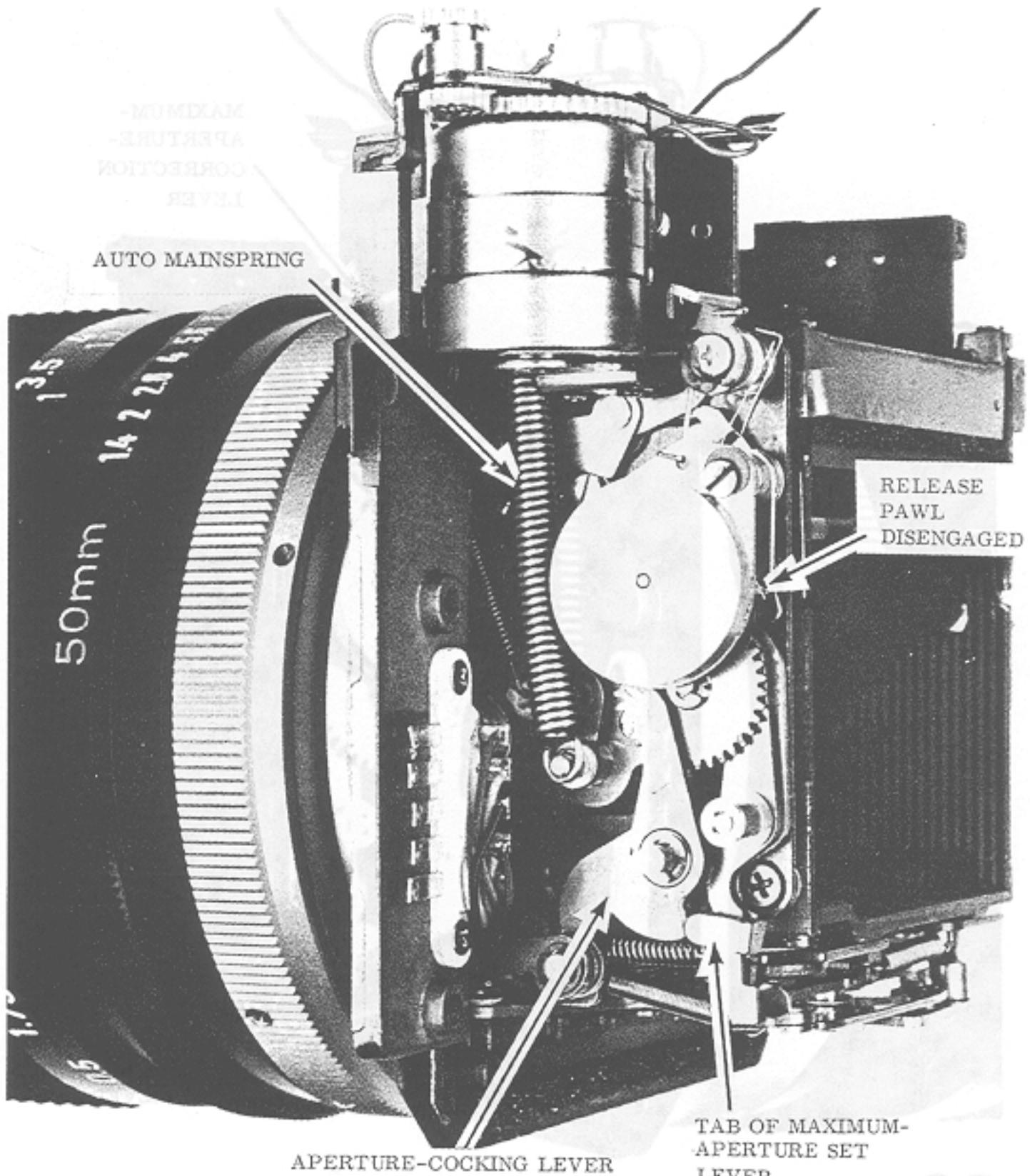
79

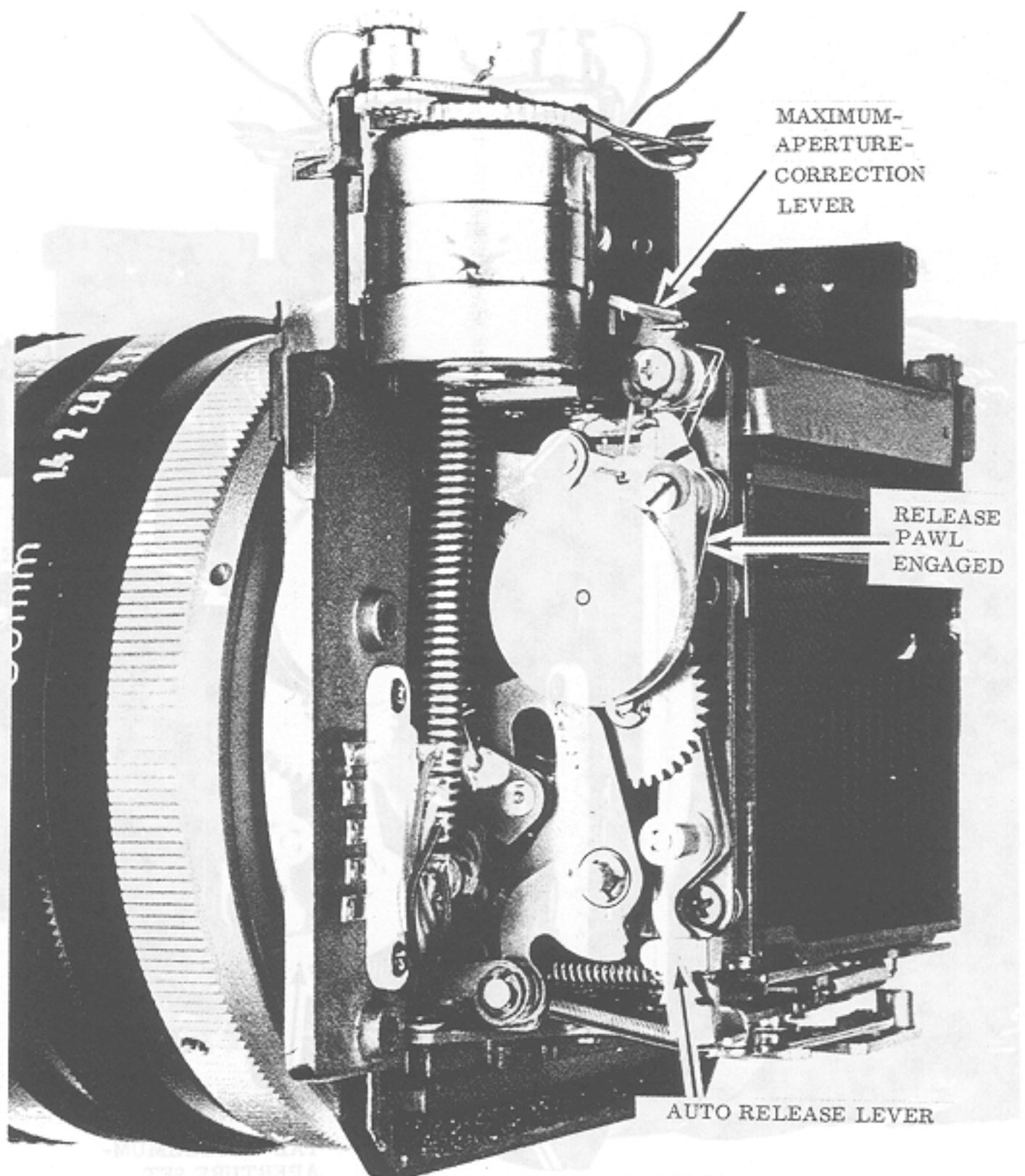
DIAPHRAGM-SETTING RING AT MANUAL SETTING

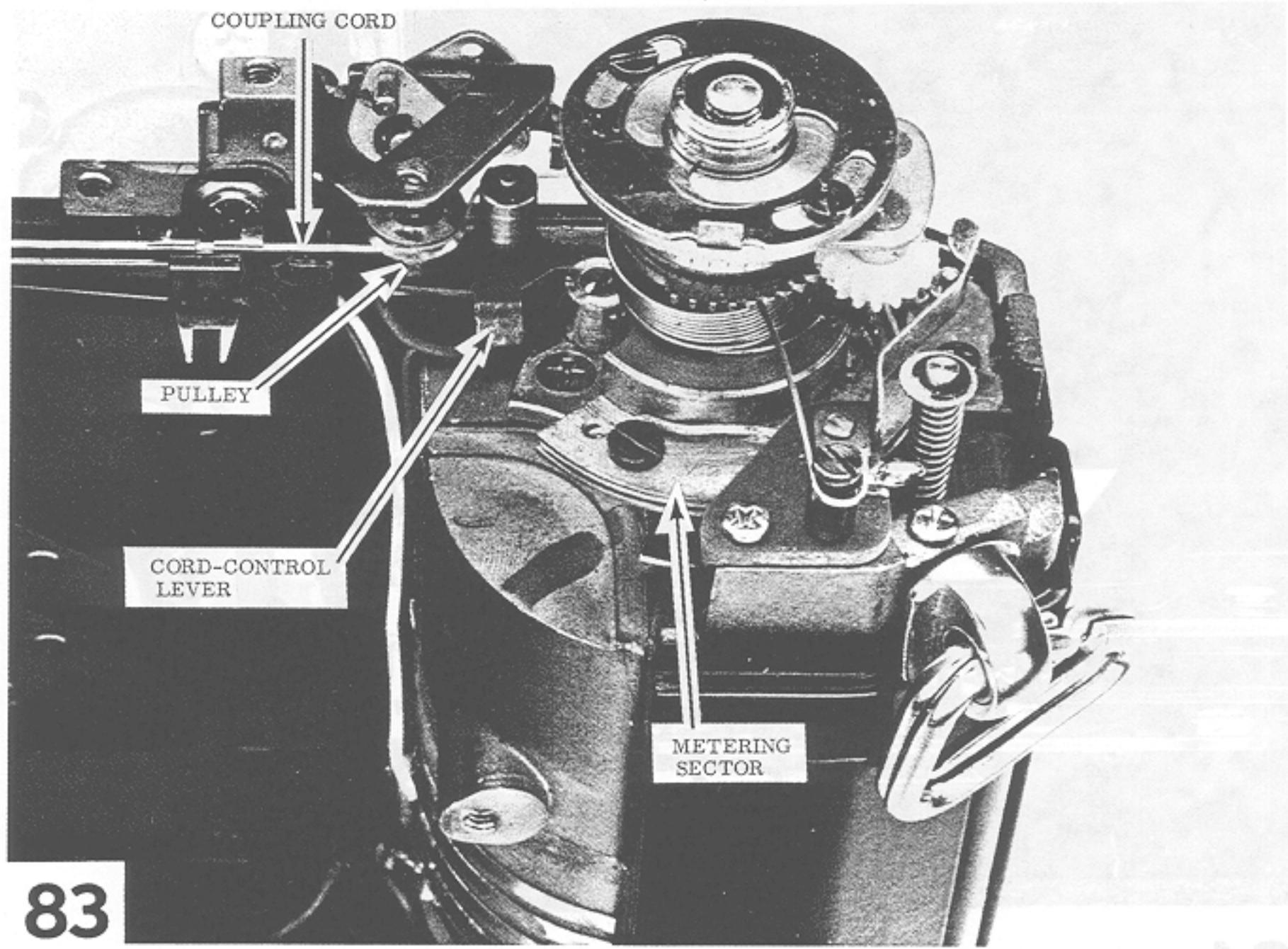
Q8

ADJUST AUTO-LATCH ENGAGEMENT WITH E-M CHANGE PIN (PART #19-0807) --
AVAILABLE WITH SHOULDER LENGTHS OF 3.3mm, 3.5mm, 3.7mm, and 3.9mm





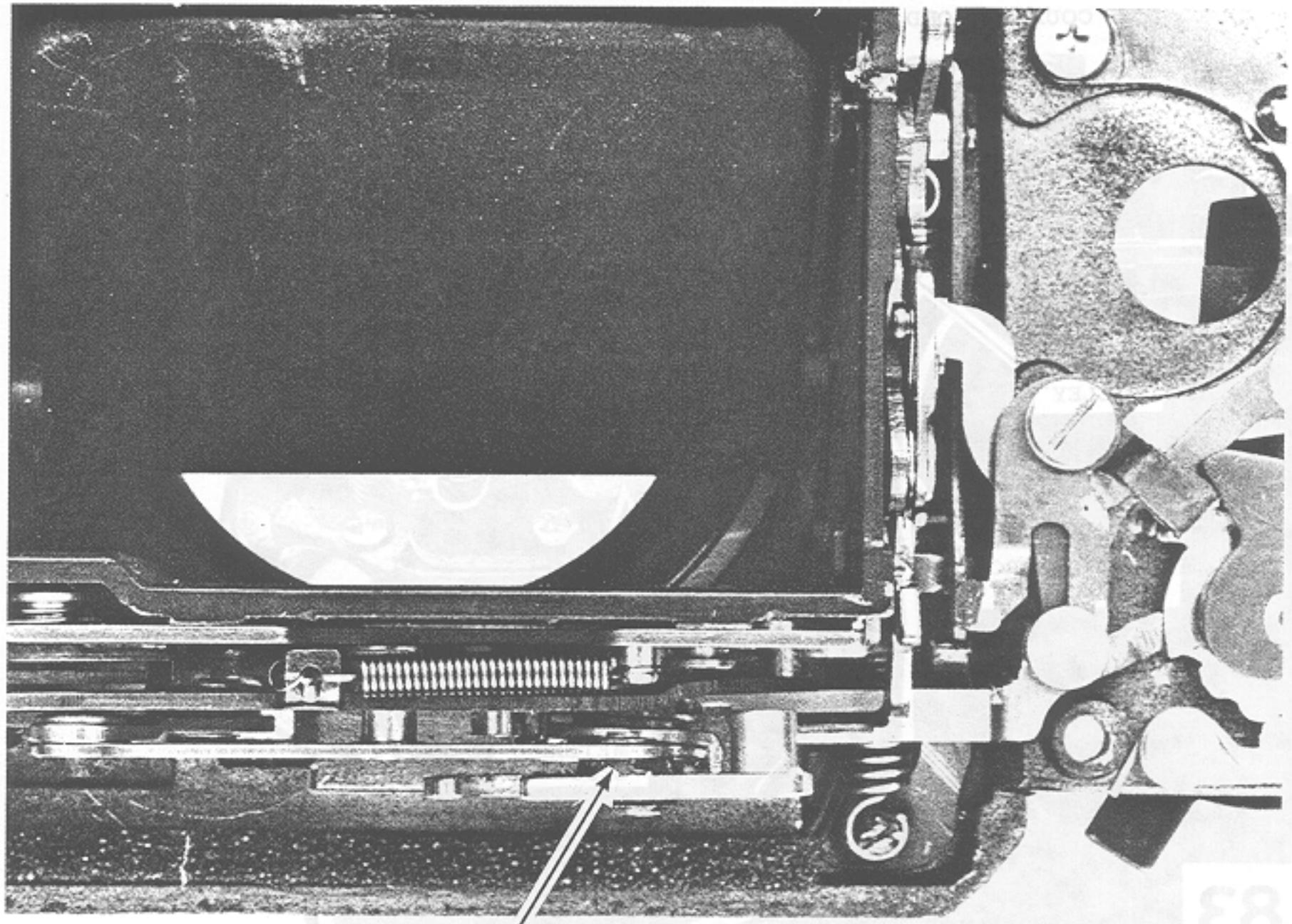




83

COUPLING CORD AND MIRROR-COUPLED LEVER AND AUTO LIFT — ADJUSTMENT BETWEEN MIRROR-COUPLED LEVER AND AUTO LIFT — ADJUSTMENT UNIT — THE RELEASE PLATE AND THE MIRROR-RELEASE LEVER SWING LINKAGE

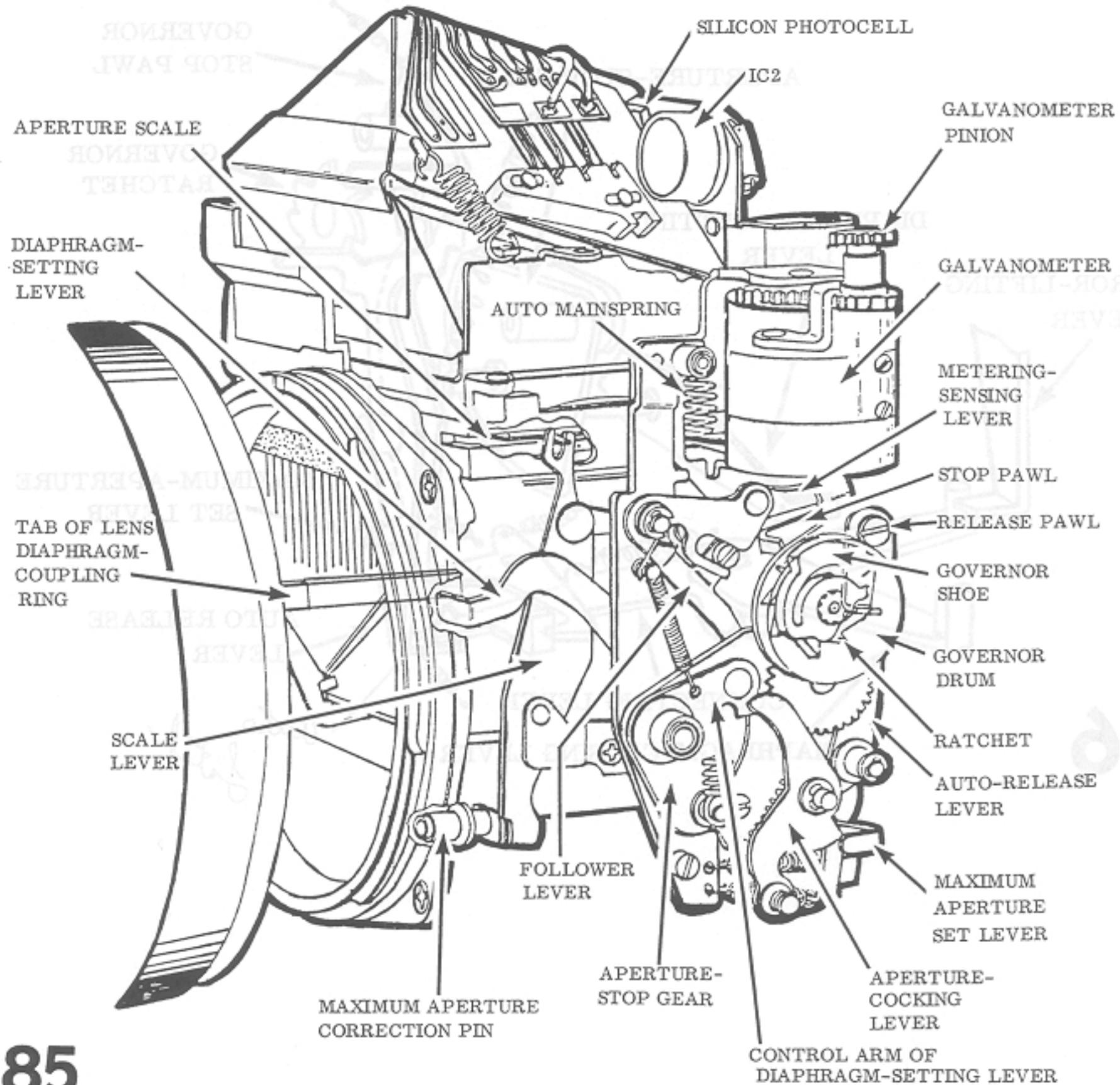
48

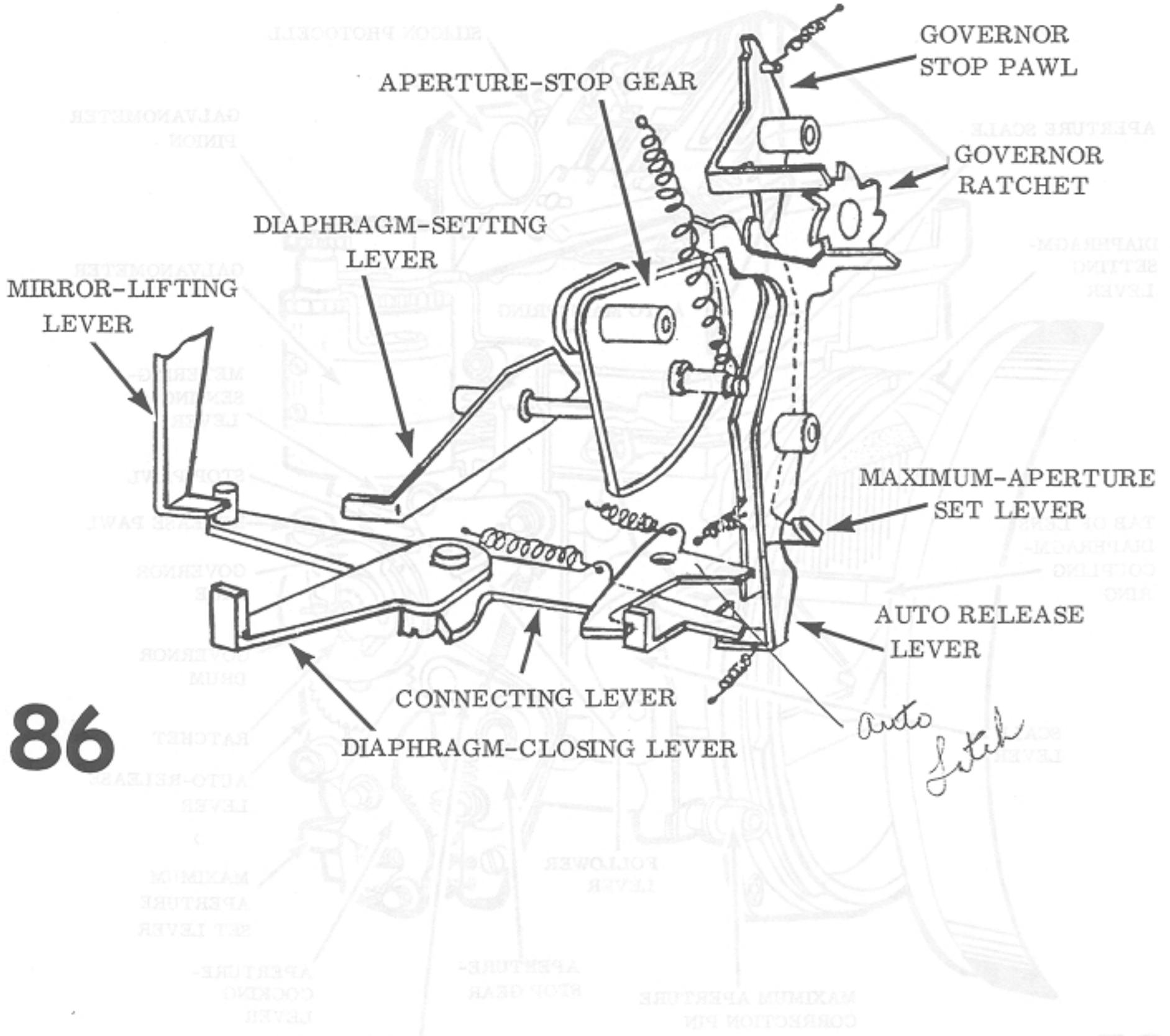


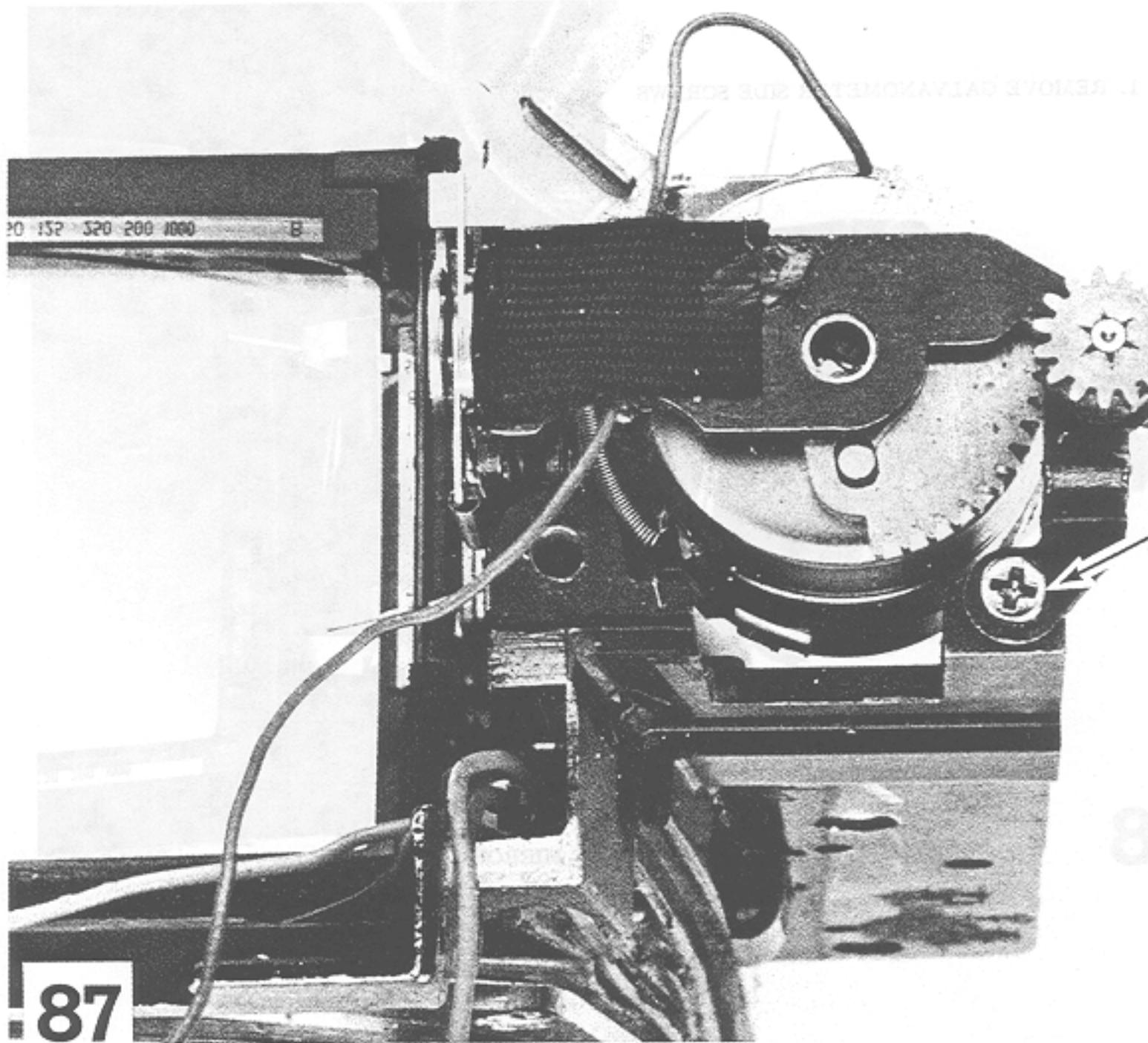
84

ECCENTRIC BETWEEN MIRROR-COCKING LEVER AND AUTO LINK -- ADJUST UNTIL THE RELEASE PAWL AND THE MIRROR-RELEASE LEVER ENGAGE SIMULTANEOUSLY

88





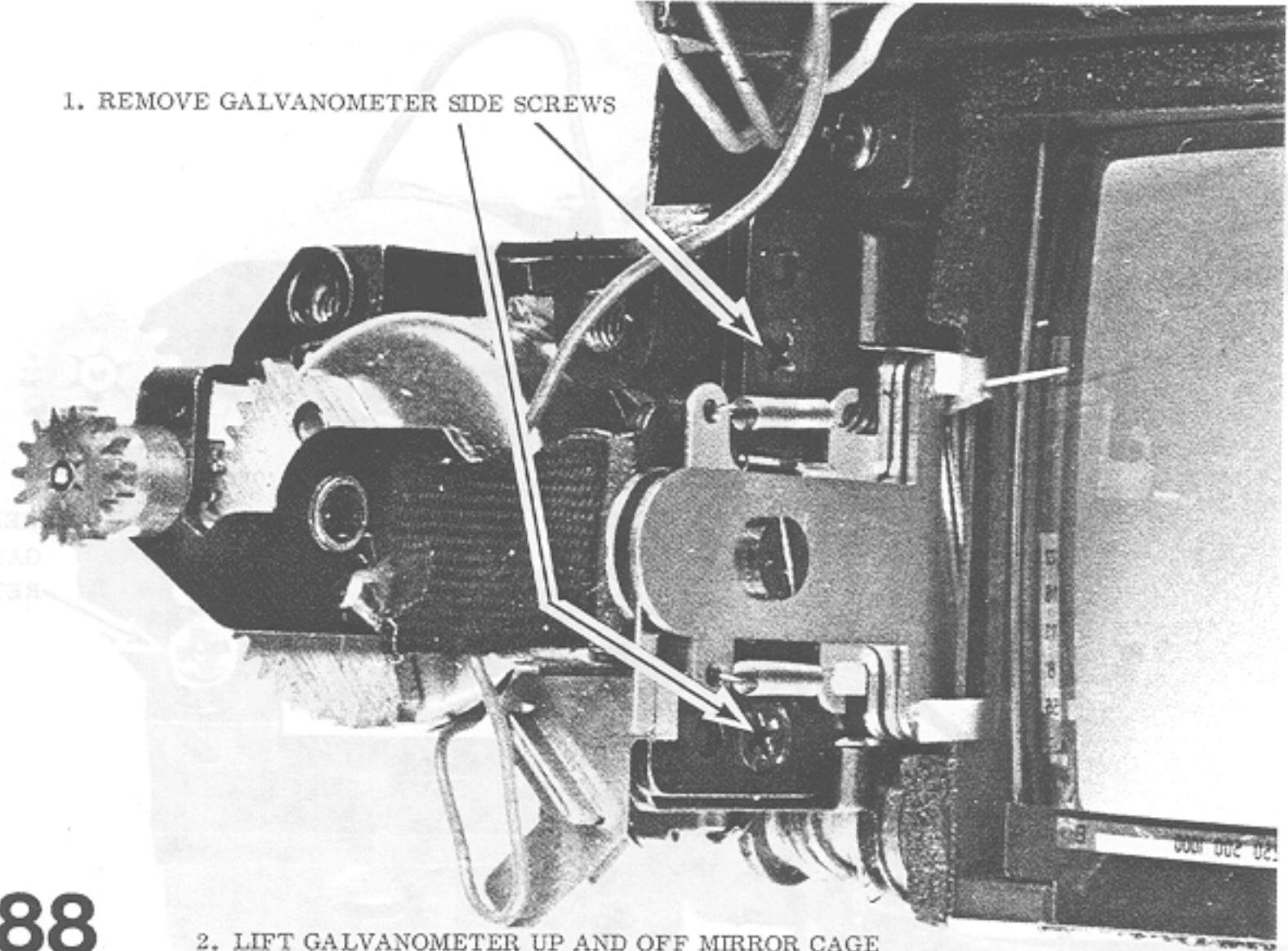


!87

88

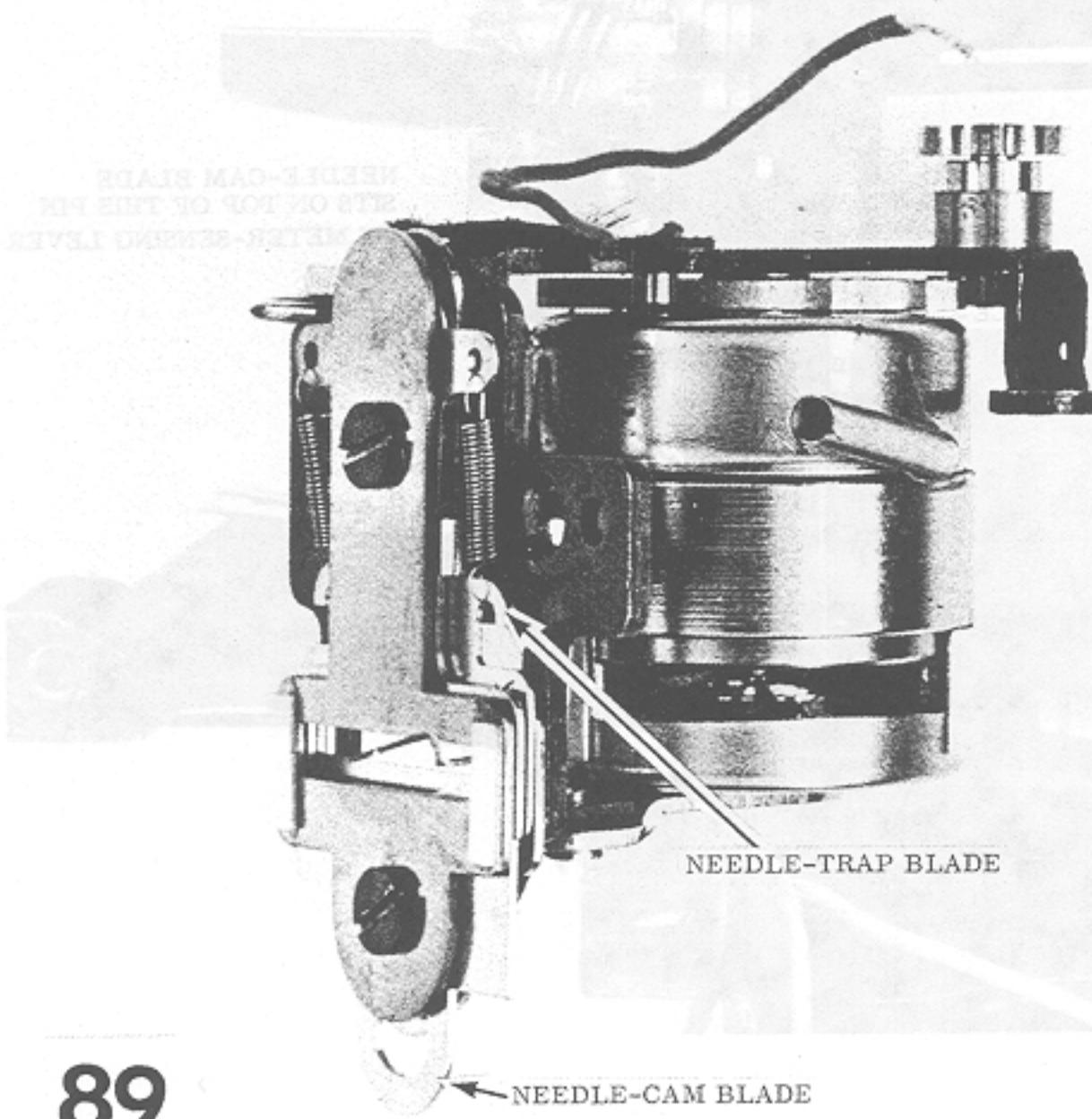
89

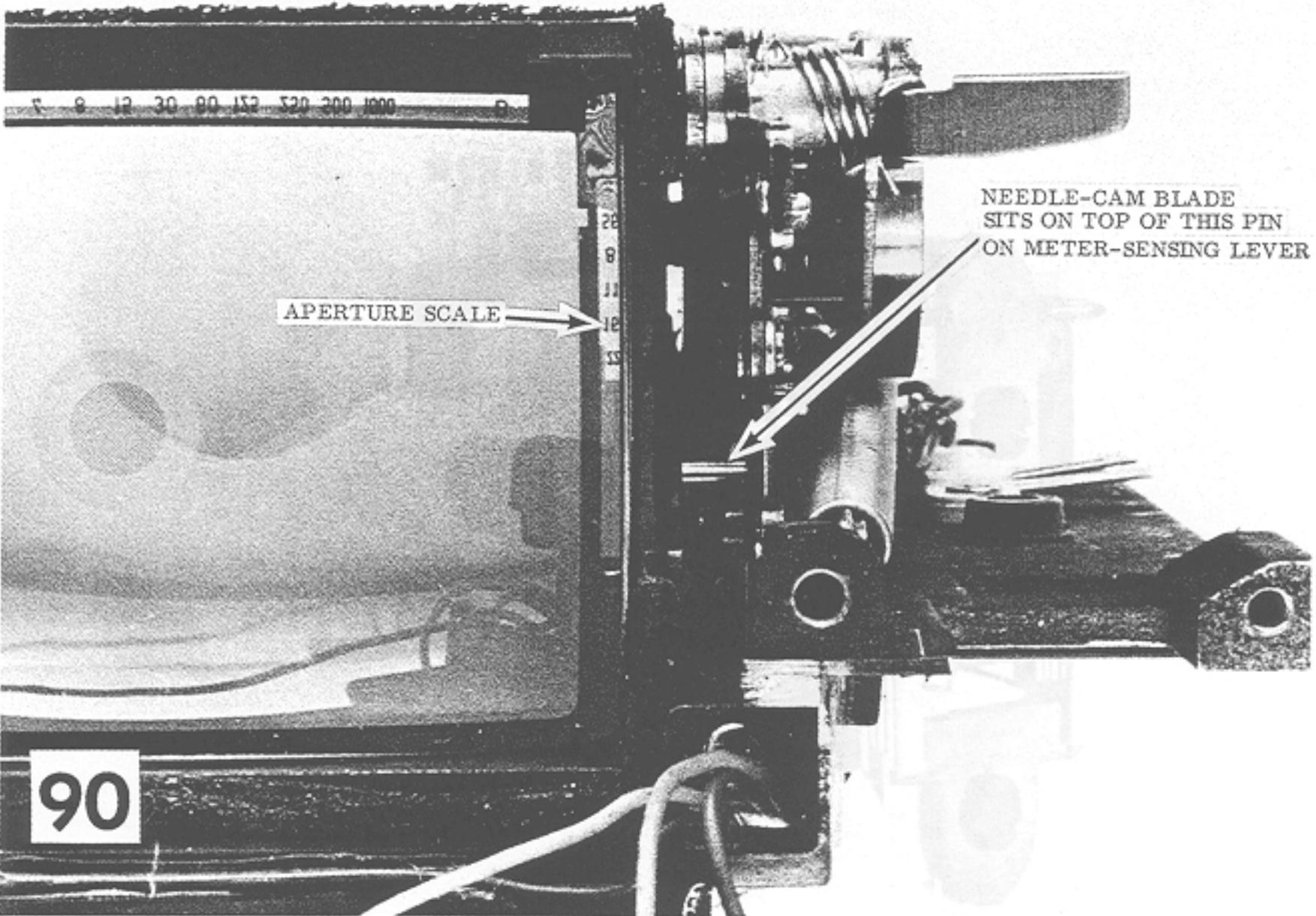
1. REMOVE GALVANOMETER SIDE SCREWS



88

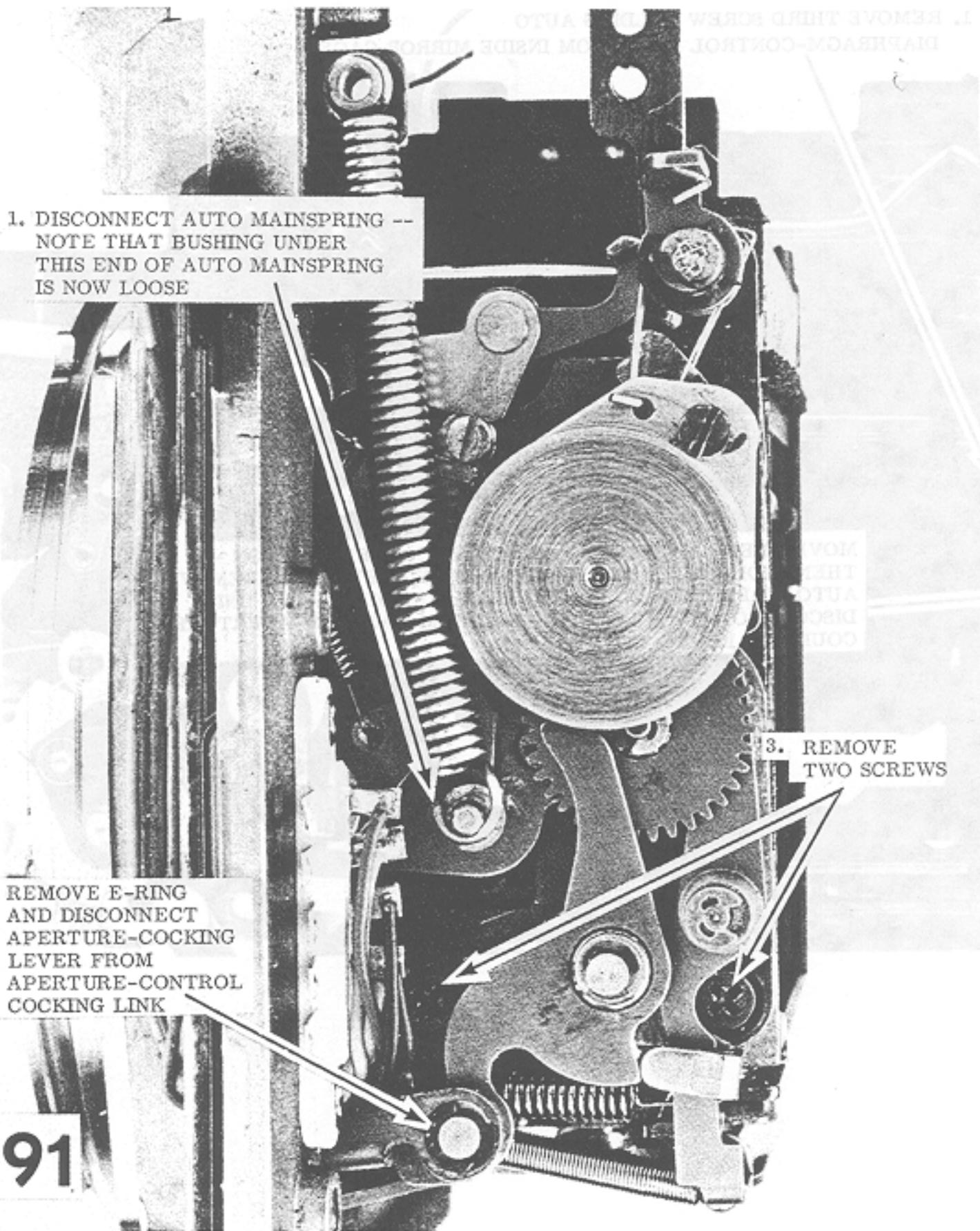
2. LIFT GALVANOMETER UP AND OFF MIRROR CAGE

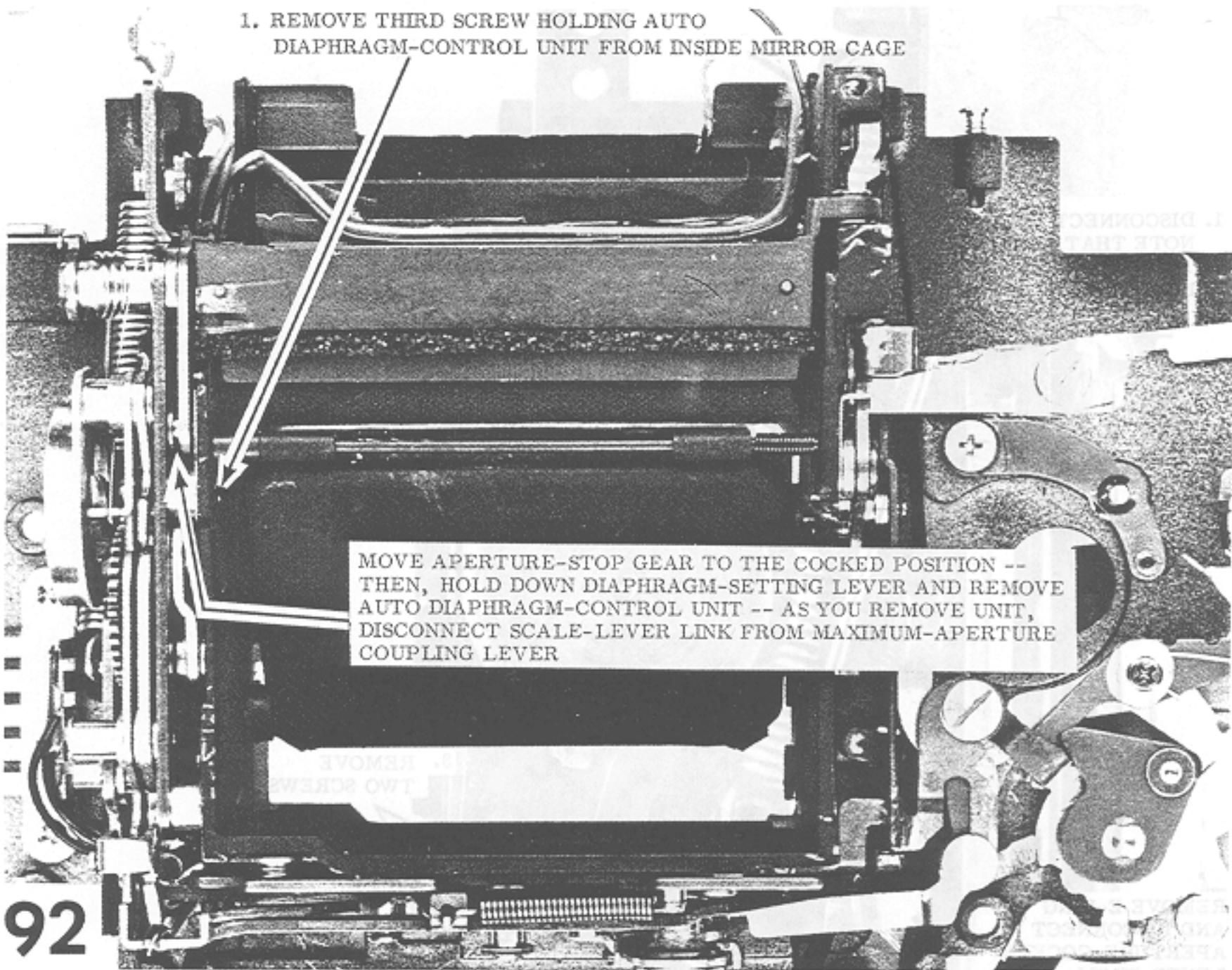


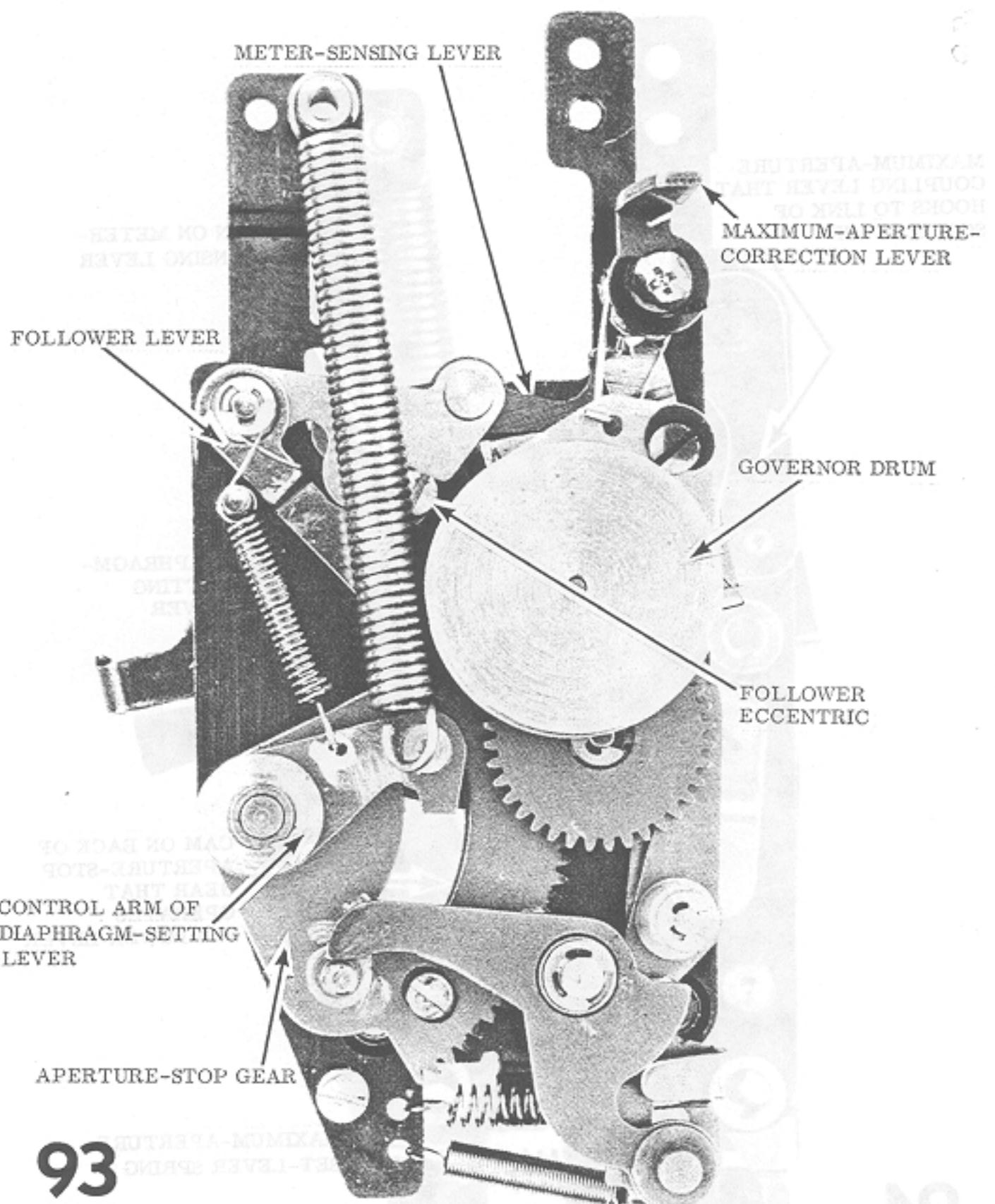


NEEDLE-CAM BLADE

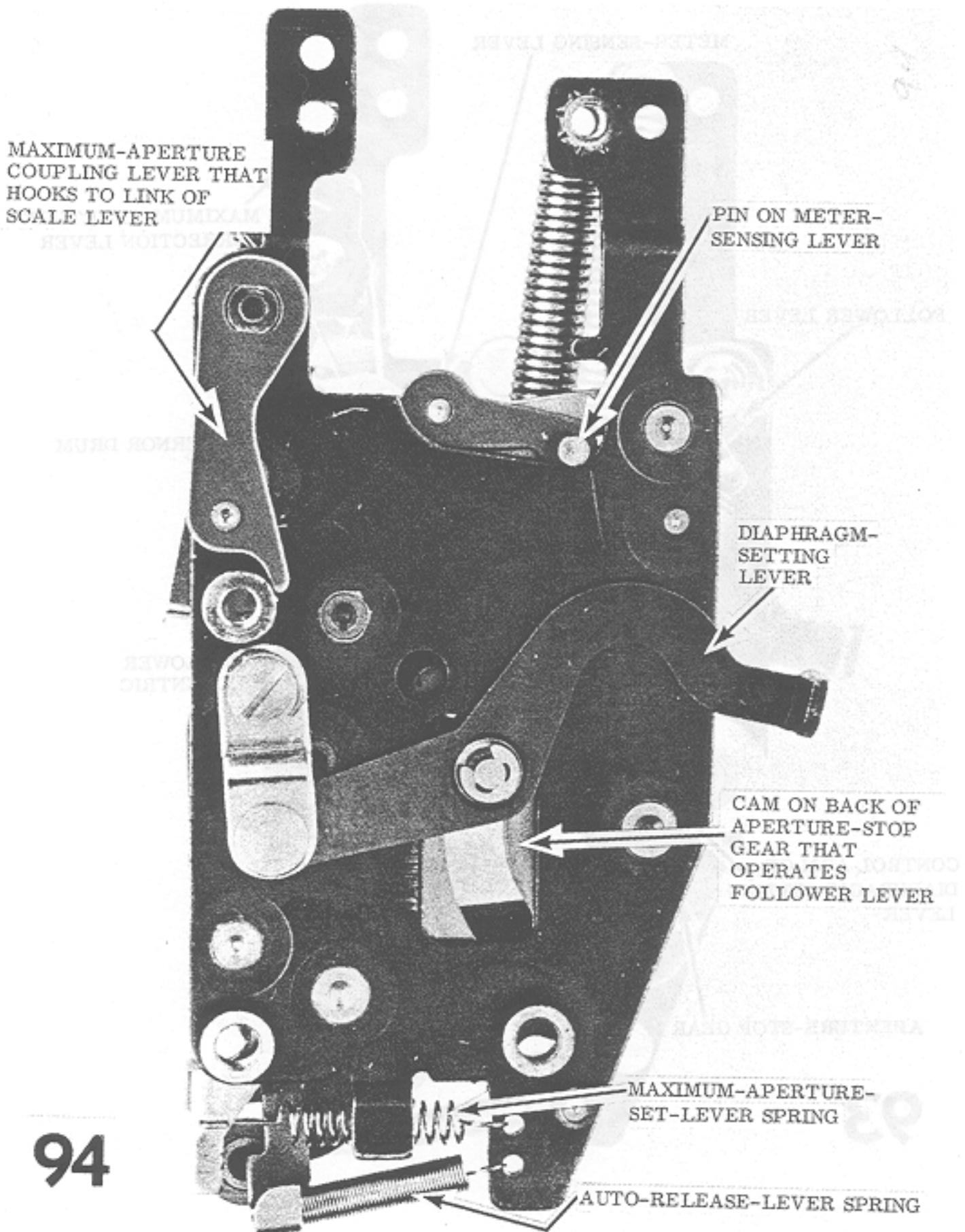
98

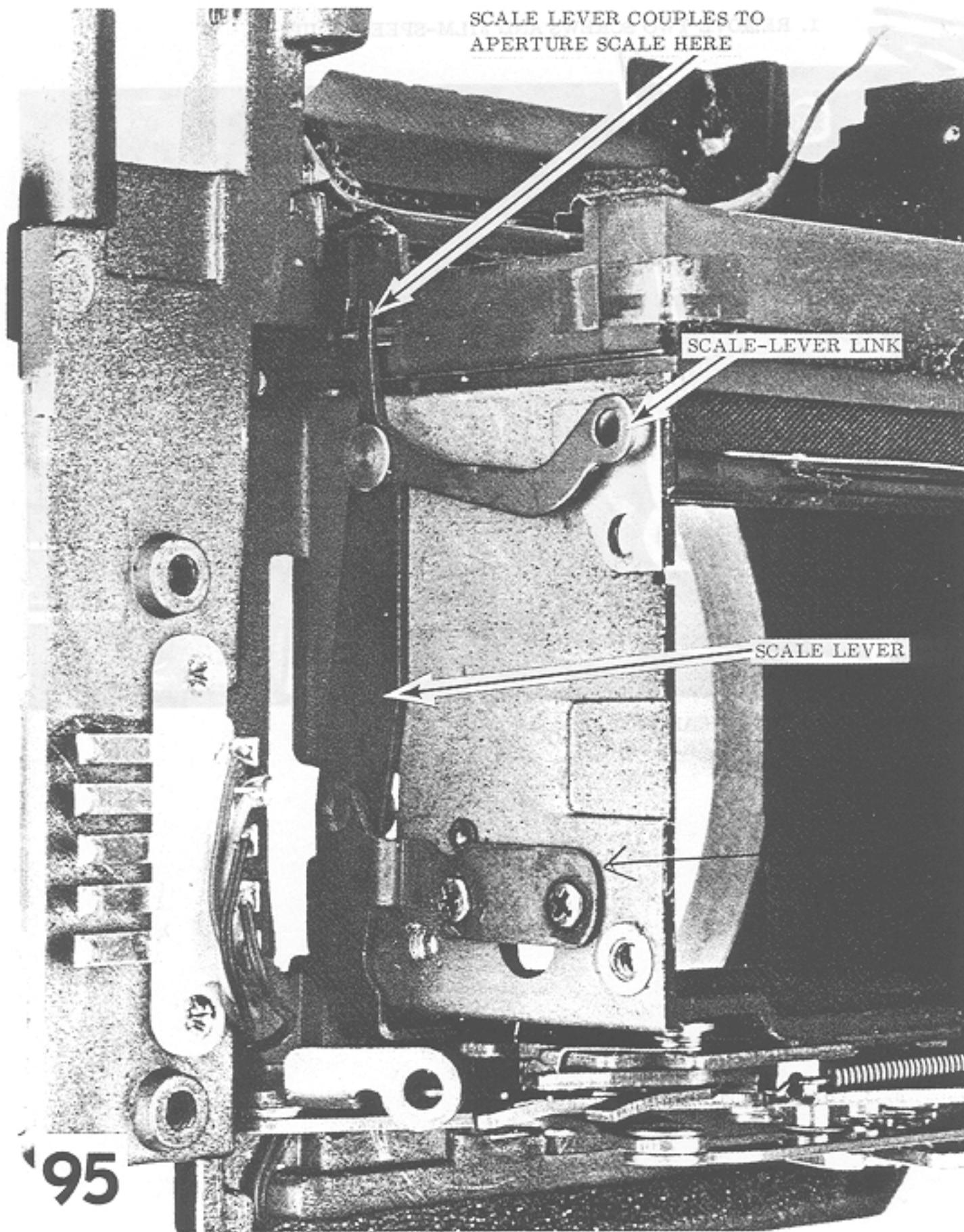




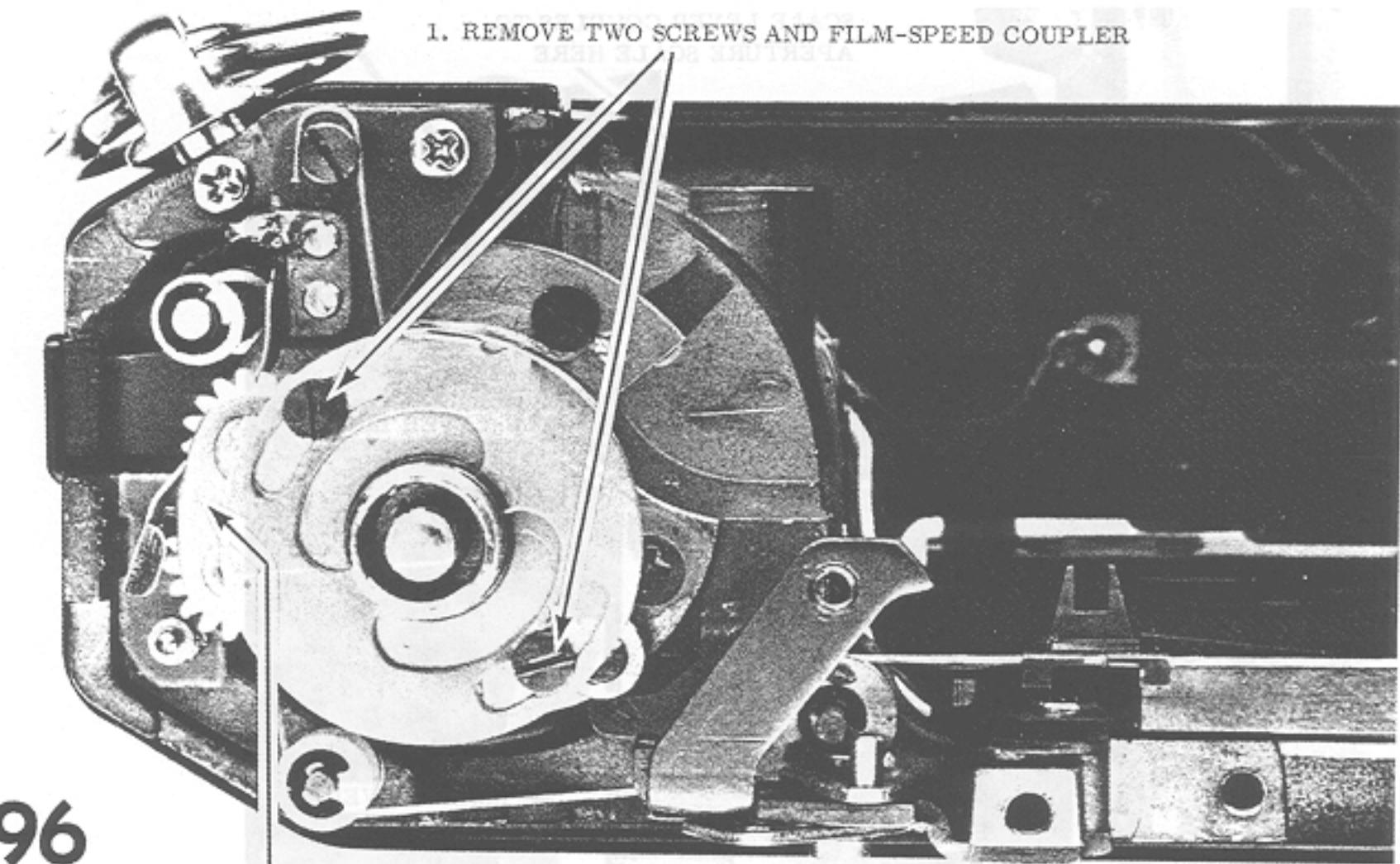


Chamfer Assembly



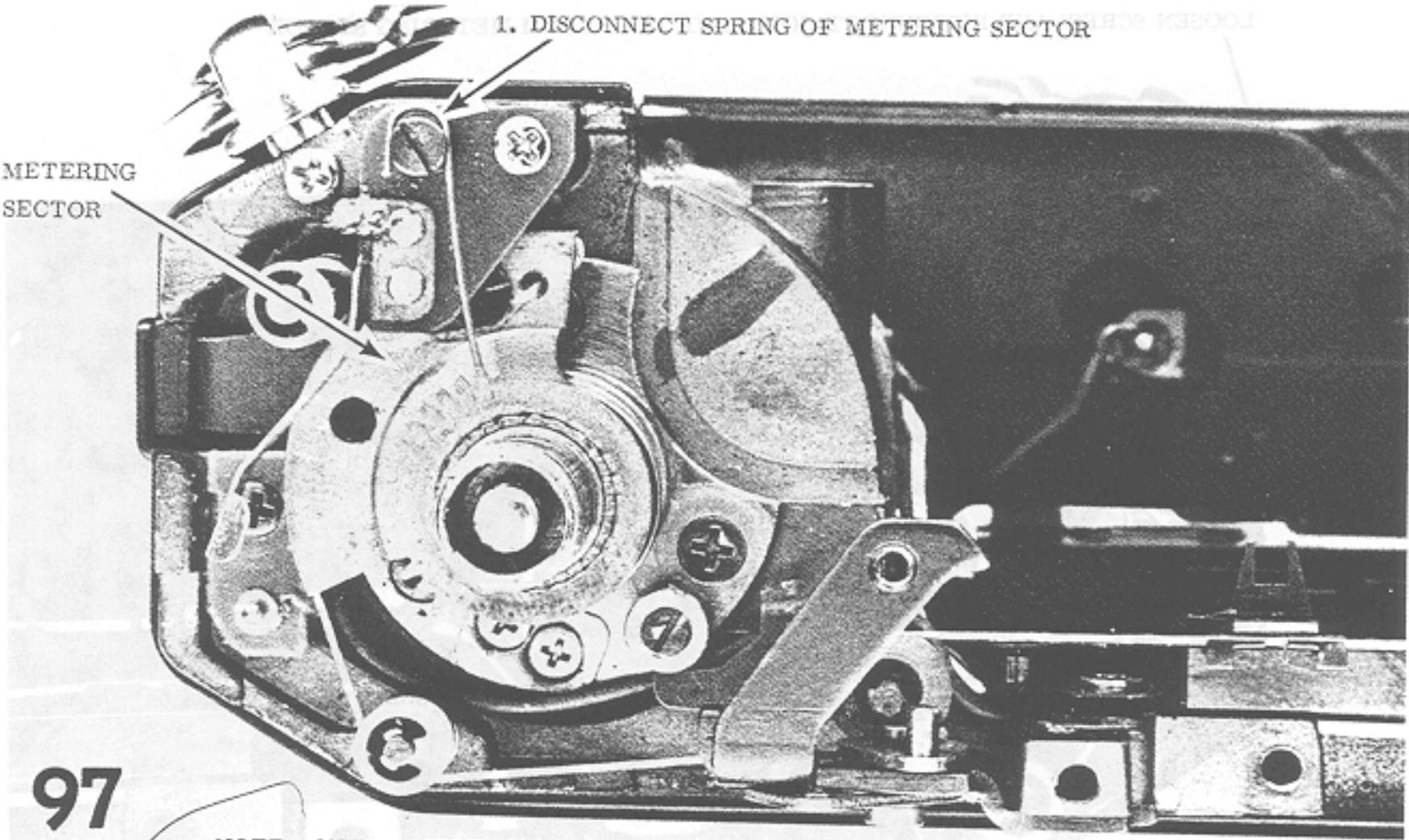


'95



96

1. REMOVE TWO SCREWS AND FILM-SPEED COUPLER
2. LIFT OFF FILM-SPEED GEAR UNIT
(SPACER UNDERNEATH)

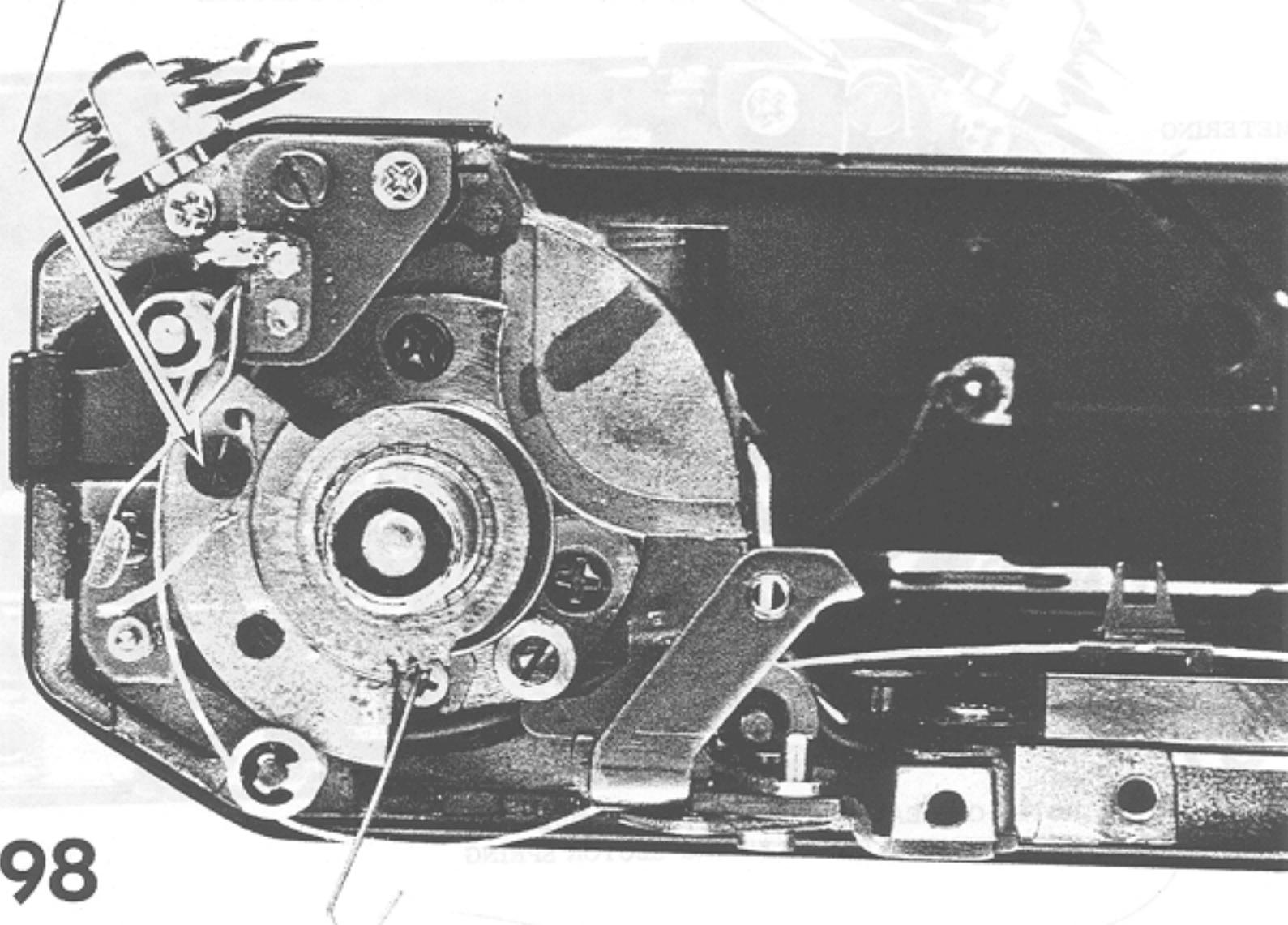


97

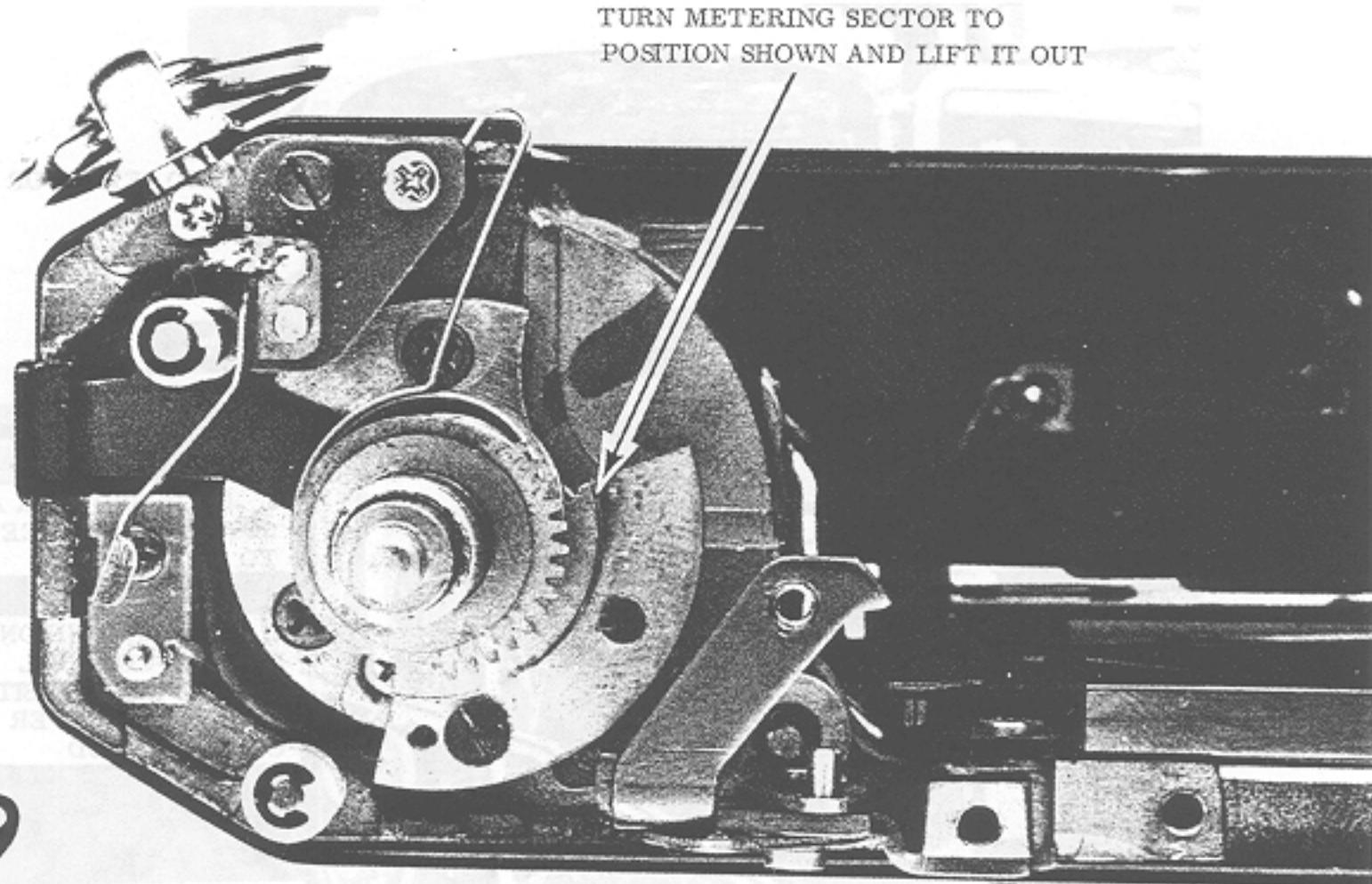
NOTE: ON REASSEMBLY, APPLY ONE FULL TURN
OF TENSION TO THE METERING-SECTOR SPRING

89

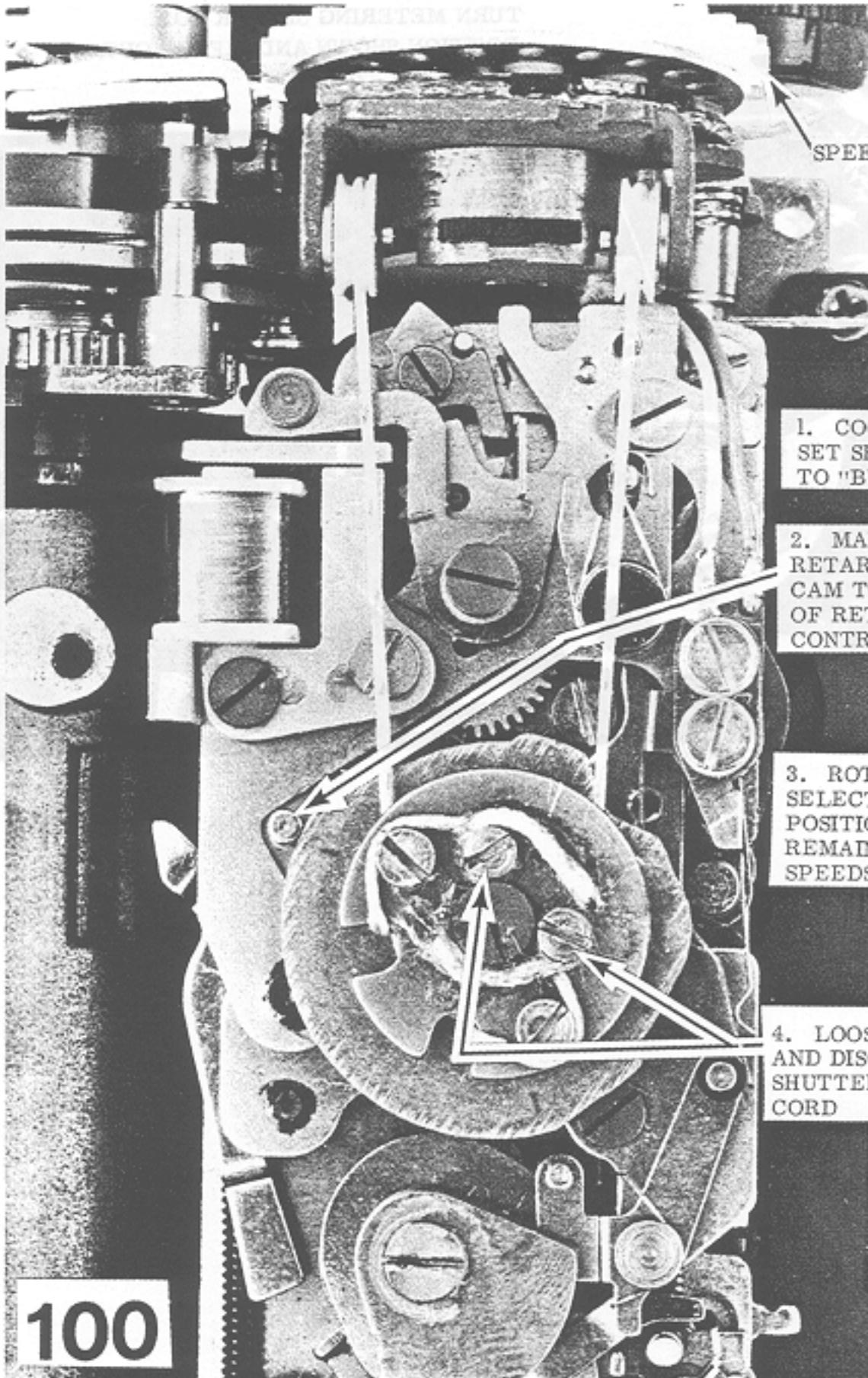
LOOSEN SCREW AND DISCONNECT COUPLING CORD FROM METERING SECTOR



TURN METERING SECTOR TO
POSITION SHOWN AND LIFT IT OUT



SPEEDS
POSITION OF
REMAINING SHUTTER
SPEEDS
ROTATE SPIDER
SPLINE AND MARK



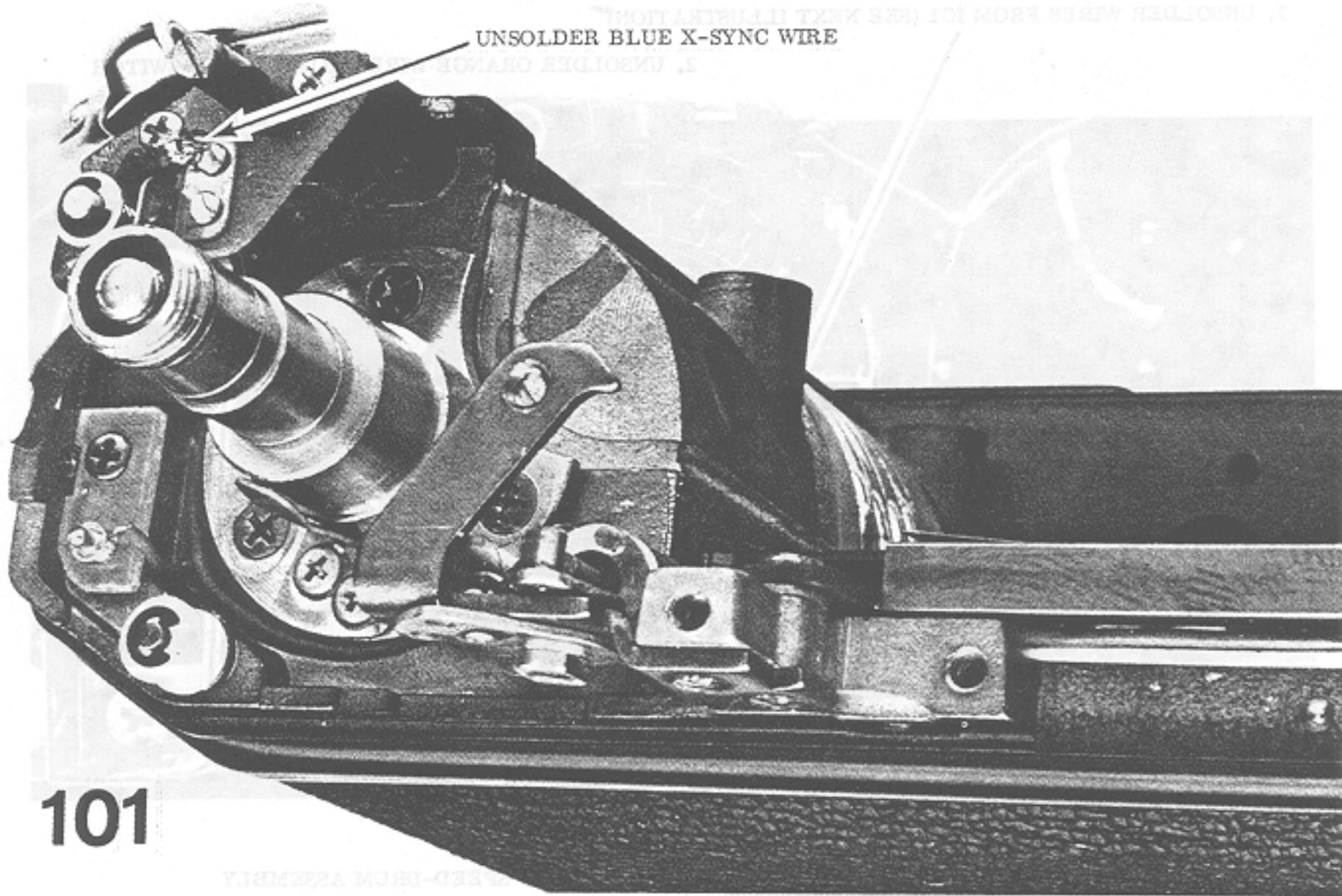
SPEED SELECTOR

1. COCK SHUTTER AND SET SHUTTER SPEED TO "BULB"

2. MARK A LINE ON RETARD-CONTROL CAM TO NOTE POSITION OF RETARD-LEVER " CONTROL STUD

3. ROTATE SPEED SELECTOR AND MARK POSITIONS OF REMAINING SHUTTER SPEEDS

4. LOOSEN SCREWS AND DISCONNECT SHUTTER-SETTING CORD

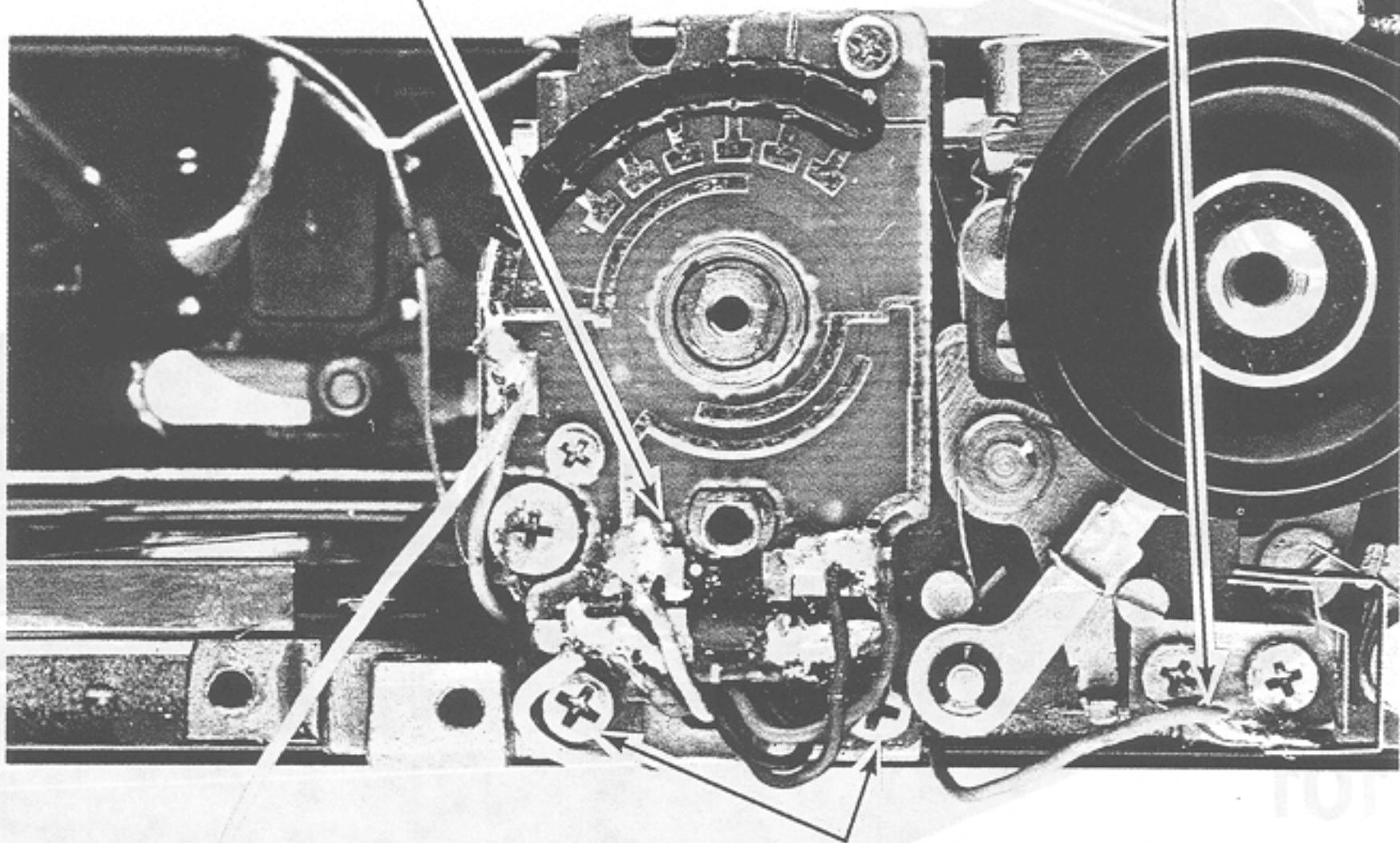


101

MOTOR SPARE PARTS DO NOT HAVE TO BE REMOVED - PLEASE REMOVE IT HERE FOR
ILLUSTRATION PURPOSES

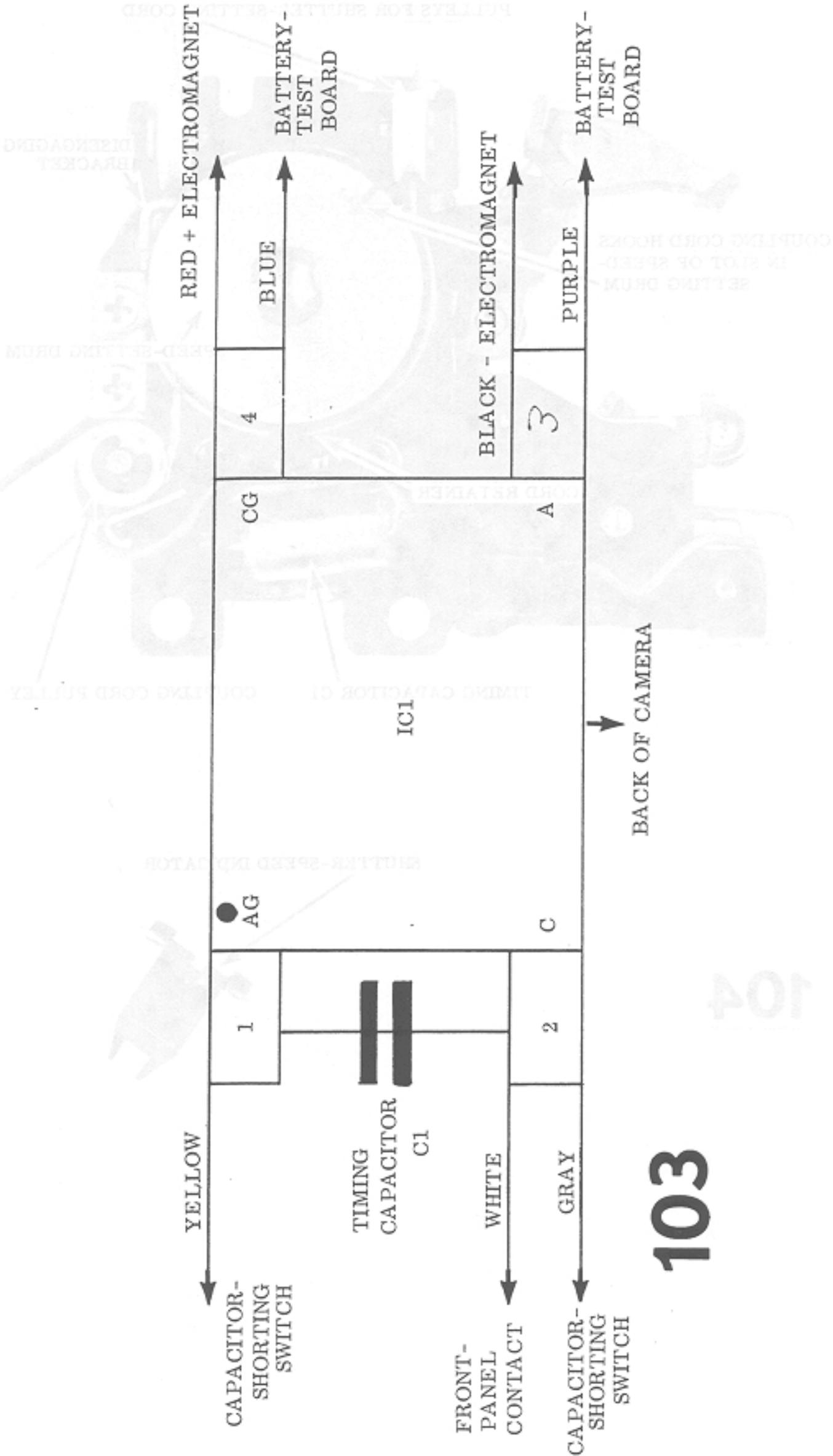
1. UNSOLDER WIRES FROM IC1 (SEE NEXT ILLUSTRATION)

2. UNSOLDER ORANGE WIRE FROM ON-OFF SWITCH

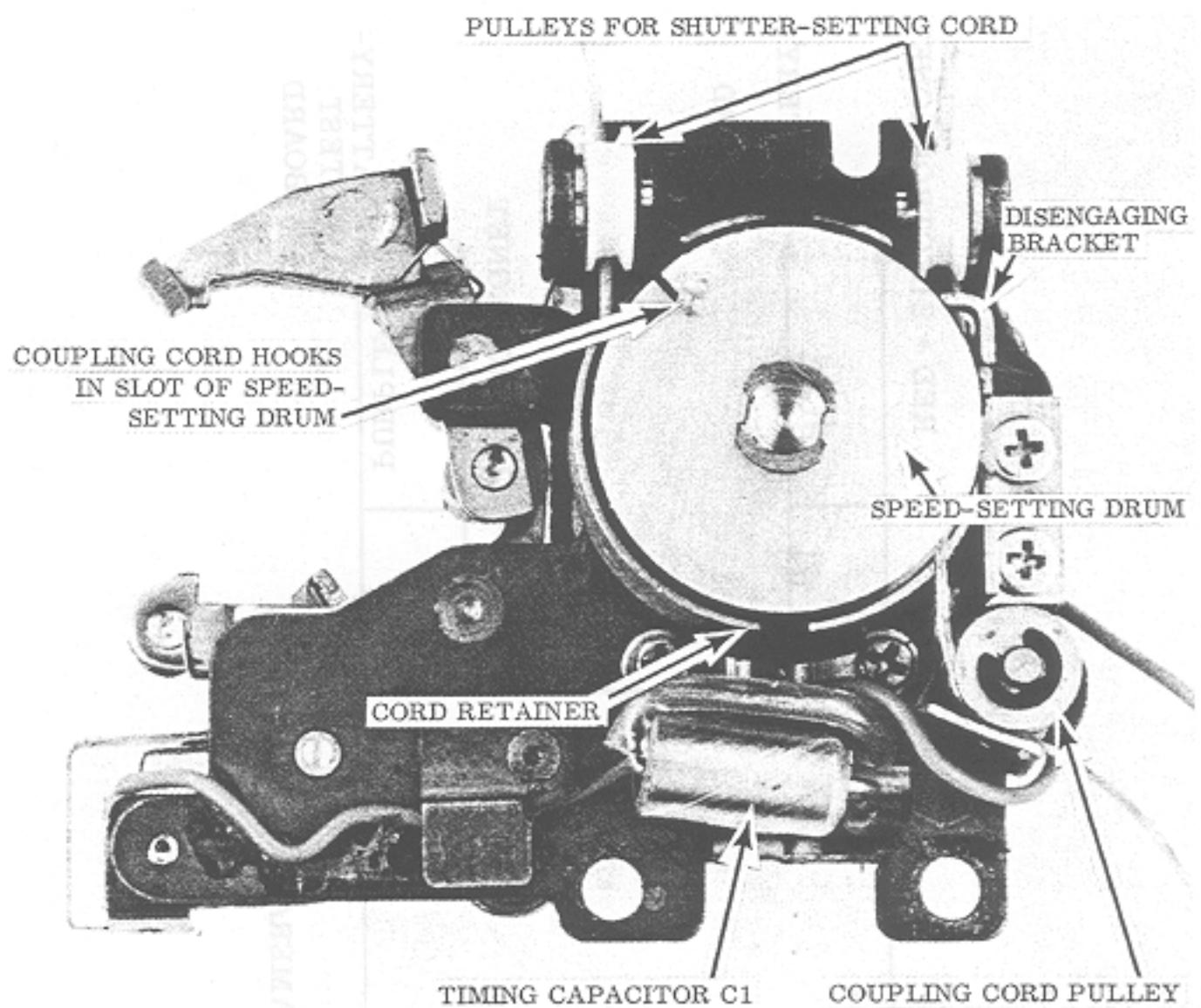


3. REMOVE TWO SCREWS AND LIFT OUT SPEED-DRUM ASSEMBLY

NOTE: SPEED SELECTOR DOES NOT HAVE TO BE REMOVED - WE'VE REMOVED IT HERE FOR
ILLUSTRATION PURPOSES



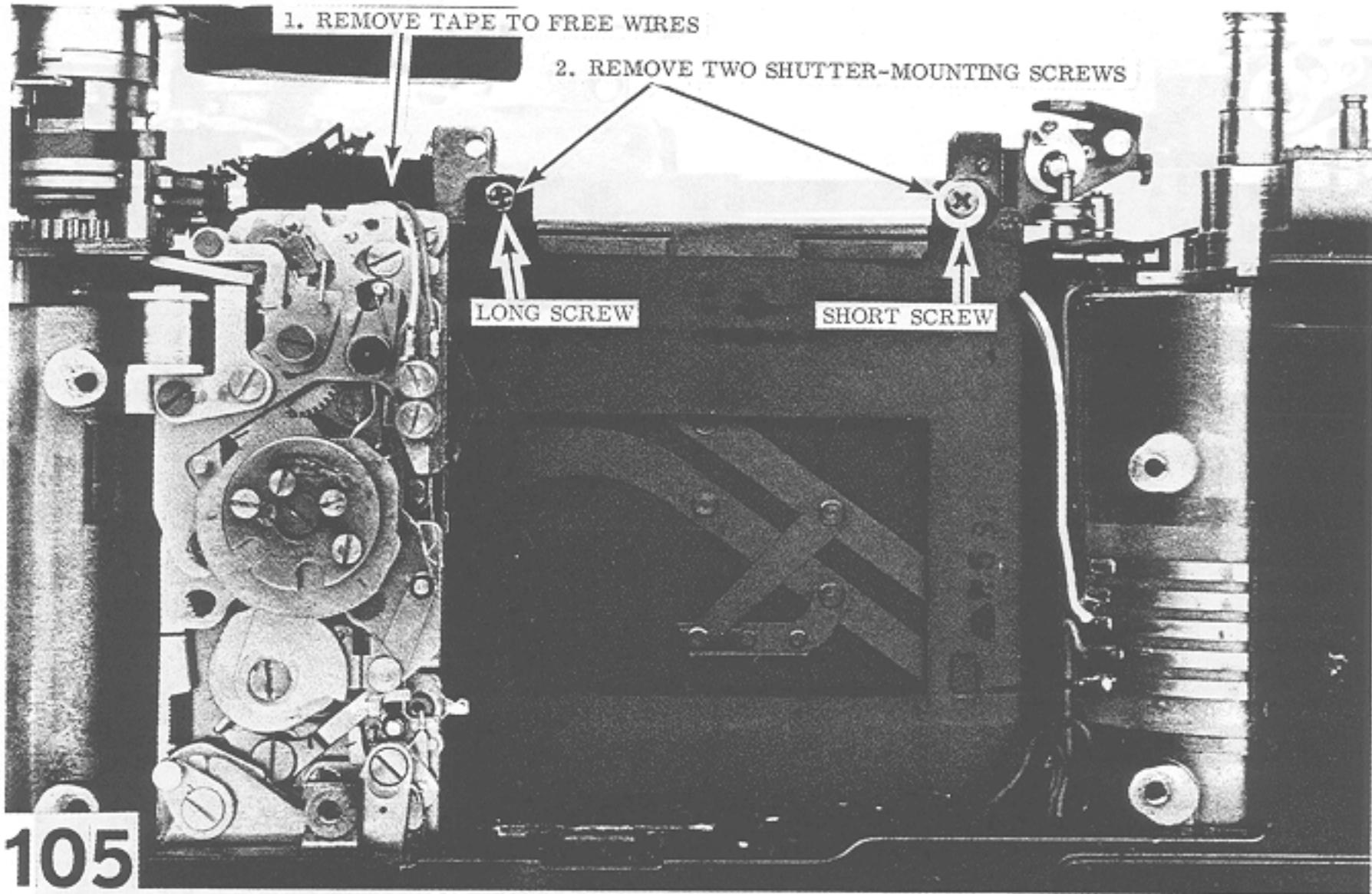
103



SHUTTER-SPEED INDICATOR

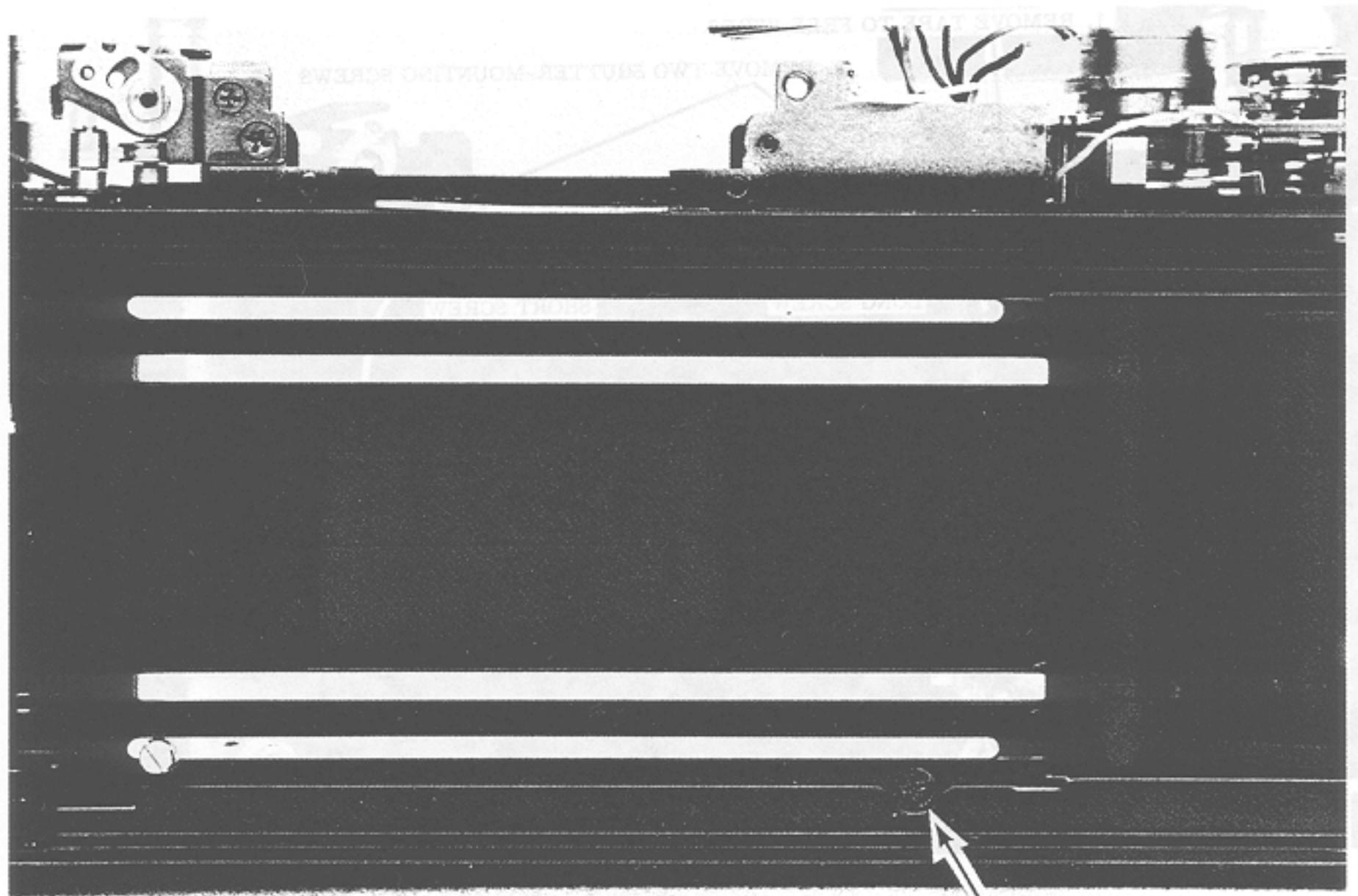
104

103



105

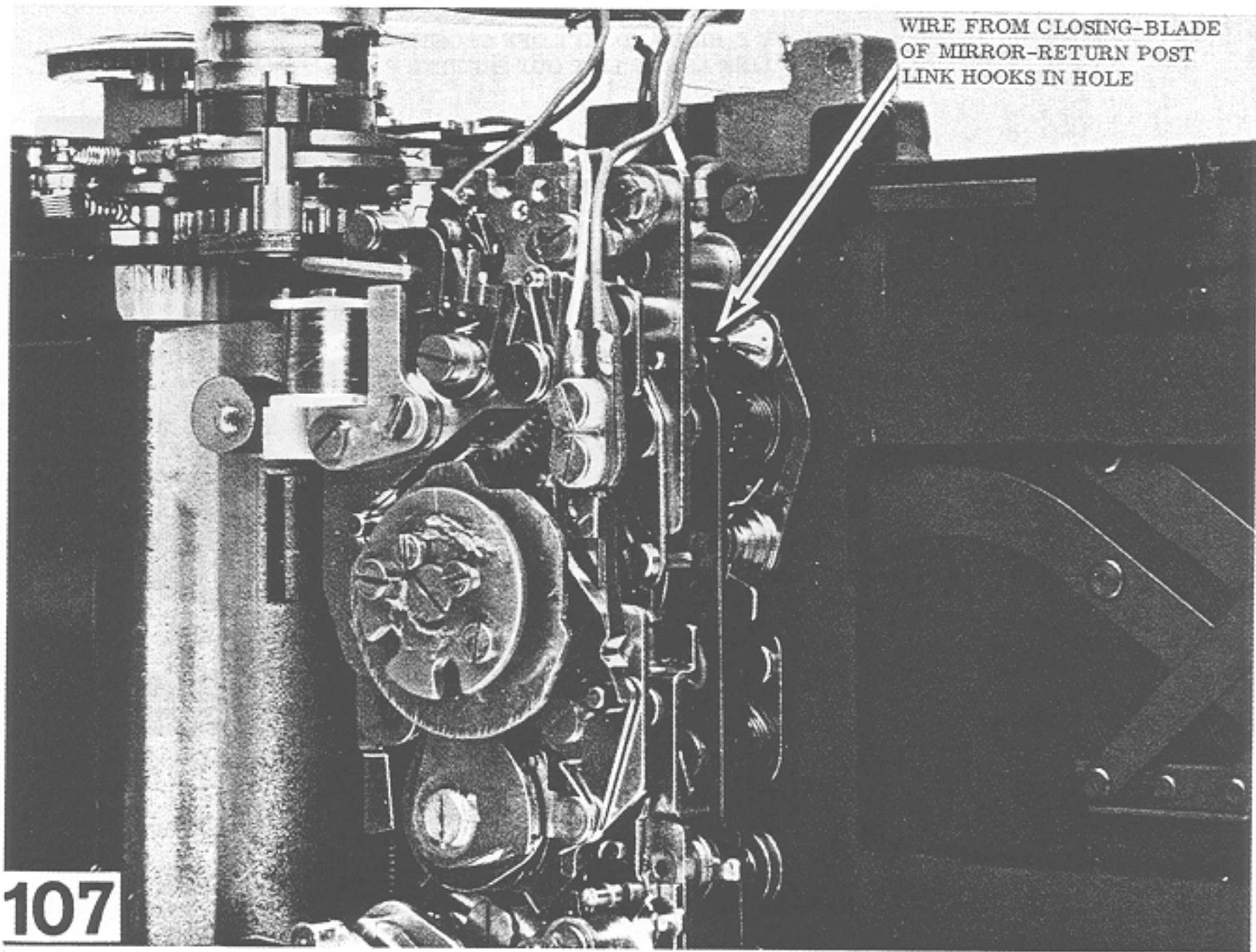
REMOVAL REAR ELEMENT-SHUTTER MOUNTING SCREWS



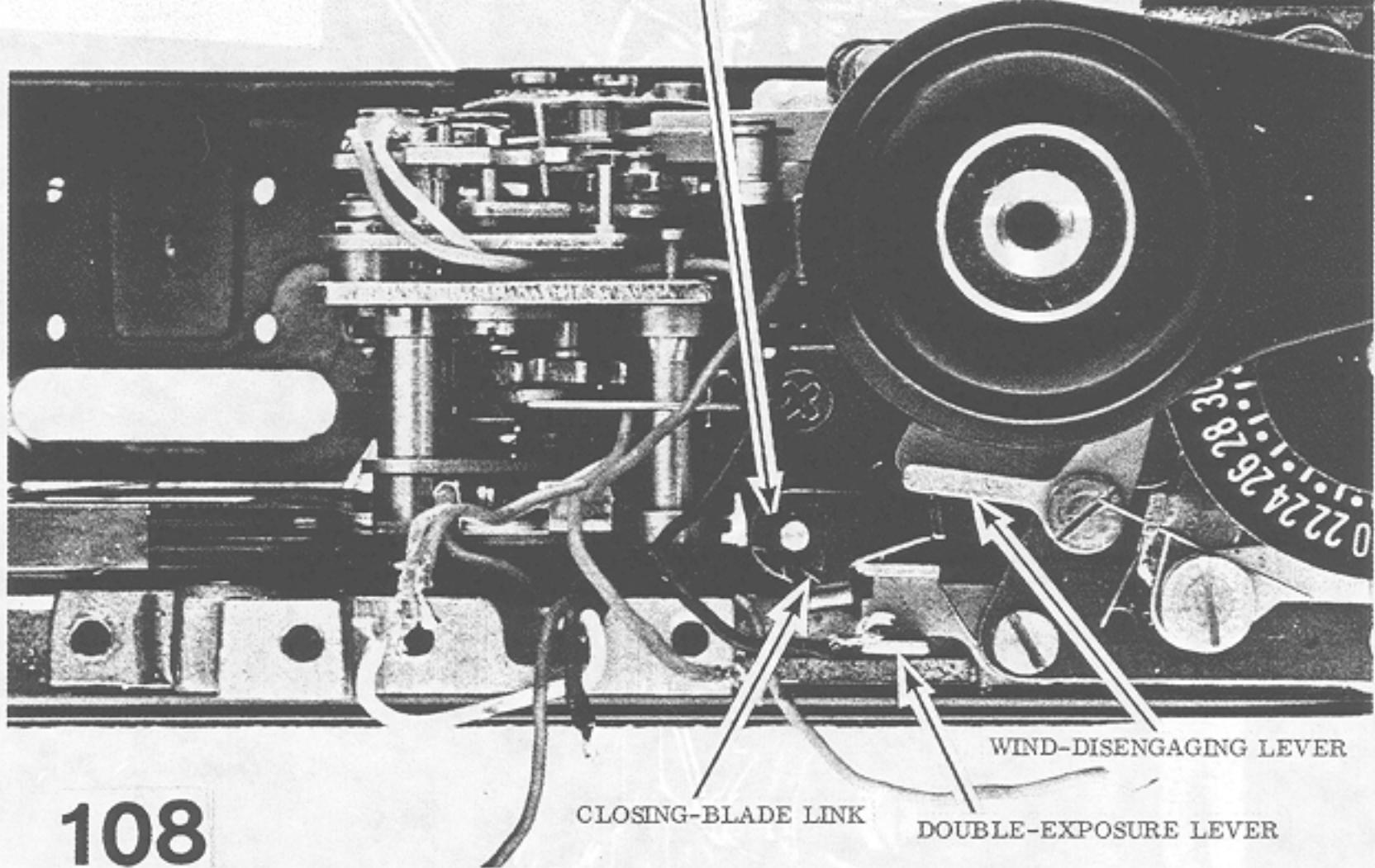
106

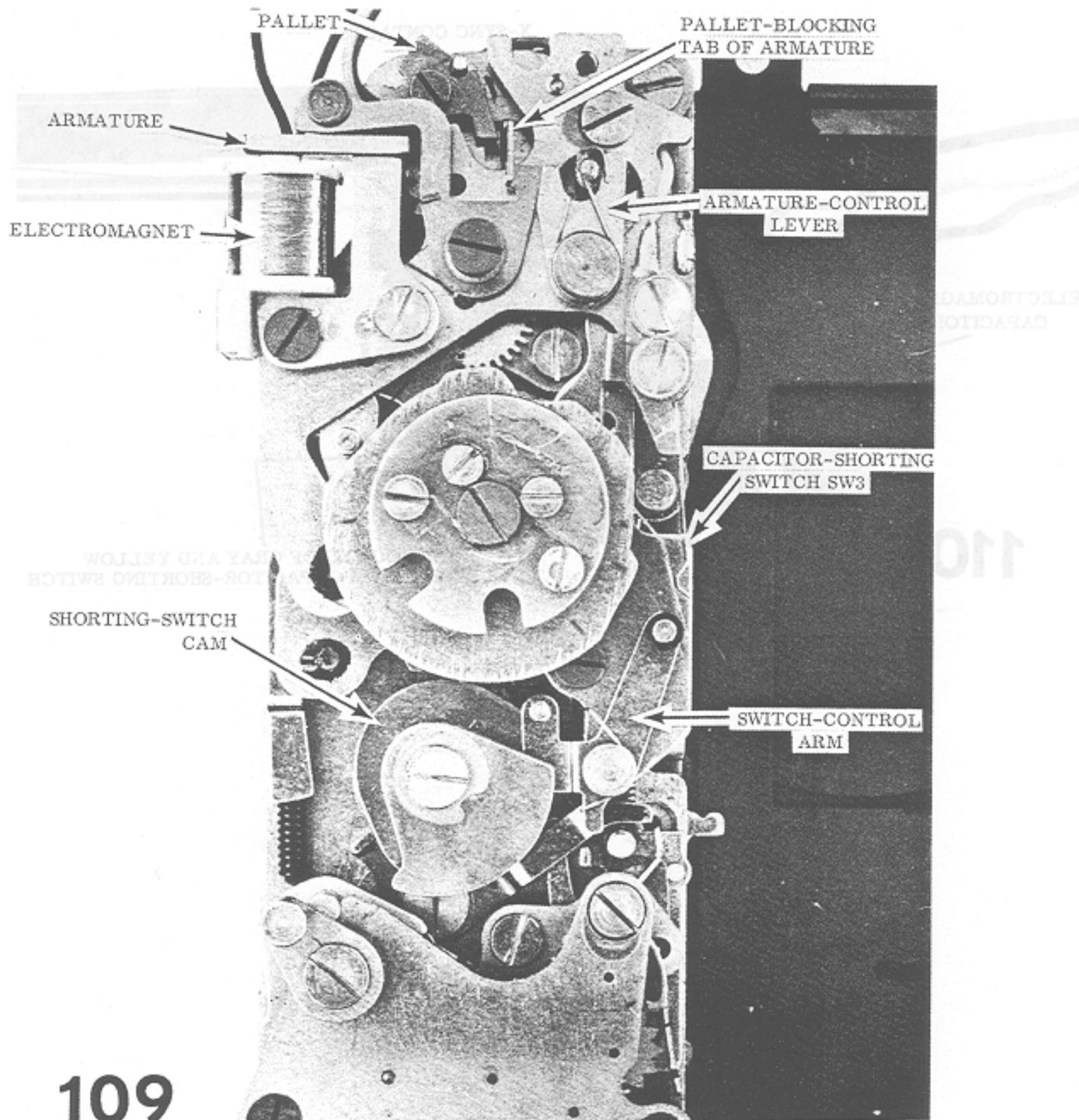
REMOVE REAR SHUTTER-MOUNTING SCREW

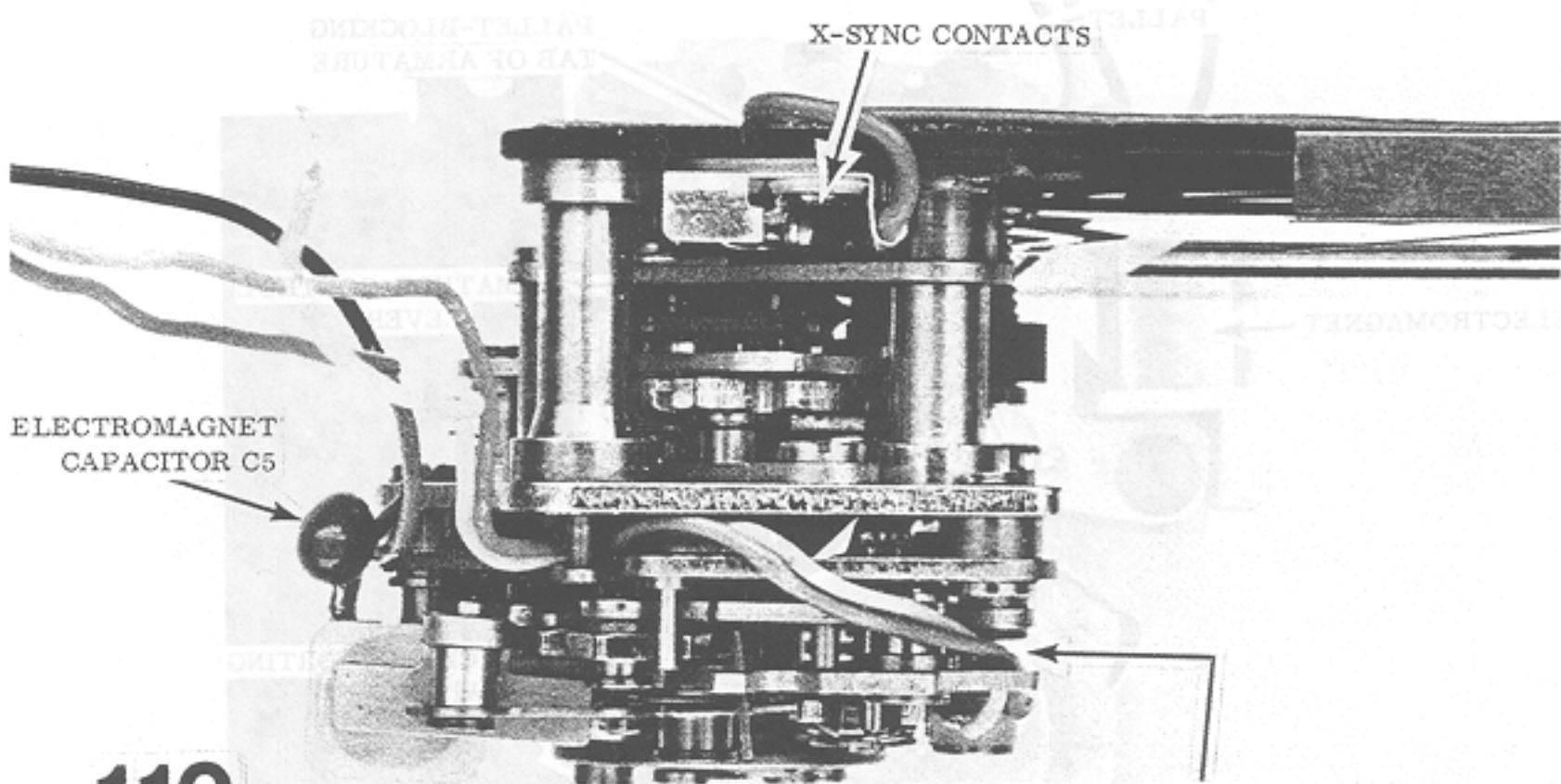
WIRE FROM CLOSING-BLADE
OF MIRROR-RETURN POST
LINK HOOKS IN HOLE



REMOVE E-RING AND LIFT OFF CLOSING-BLADE
LINK AS YOU LIFT OUT SHUTTER



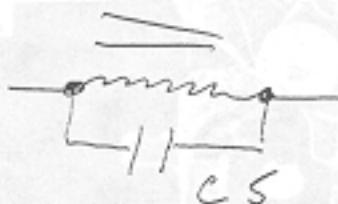




110

NOTE ROUTING OF GRAY AND YELLOW
WIRES FROM CAPACITOR-SHORTING SWITCH

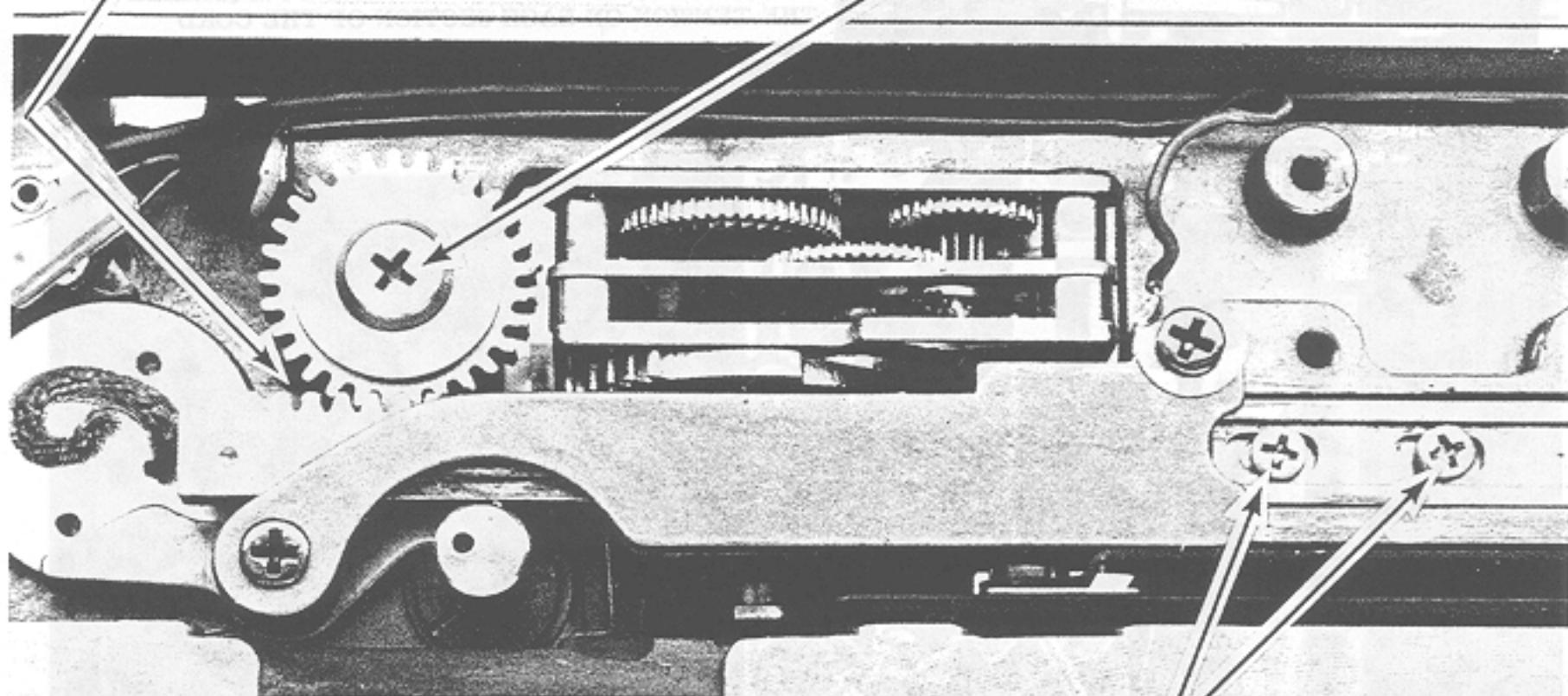
modification



0.1 μ F

ENGAGEMENT OF COCKING RACK WITH
WIND-SHAFT GEAR -- 7 1/2 TO 8 TEETH

LEFT-HAND SCREW

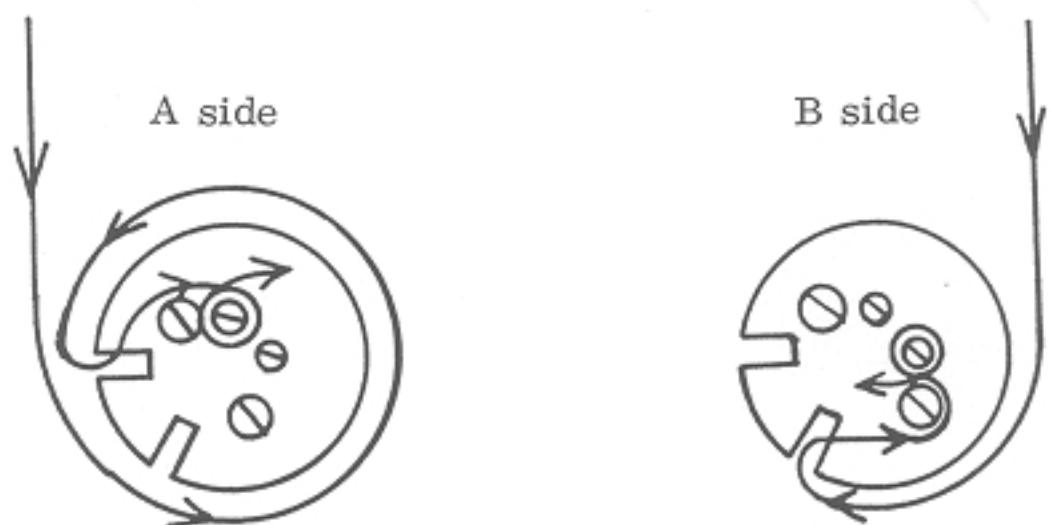
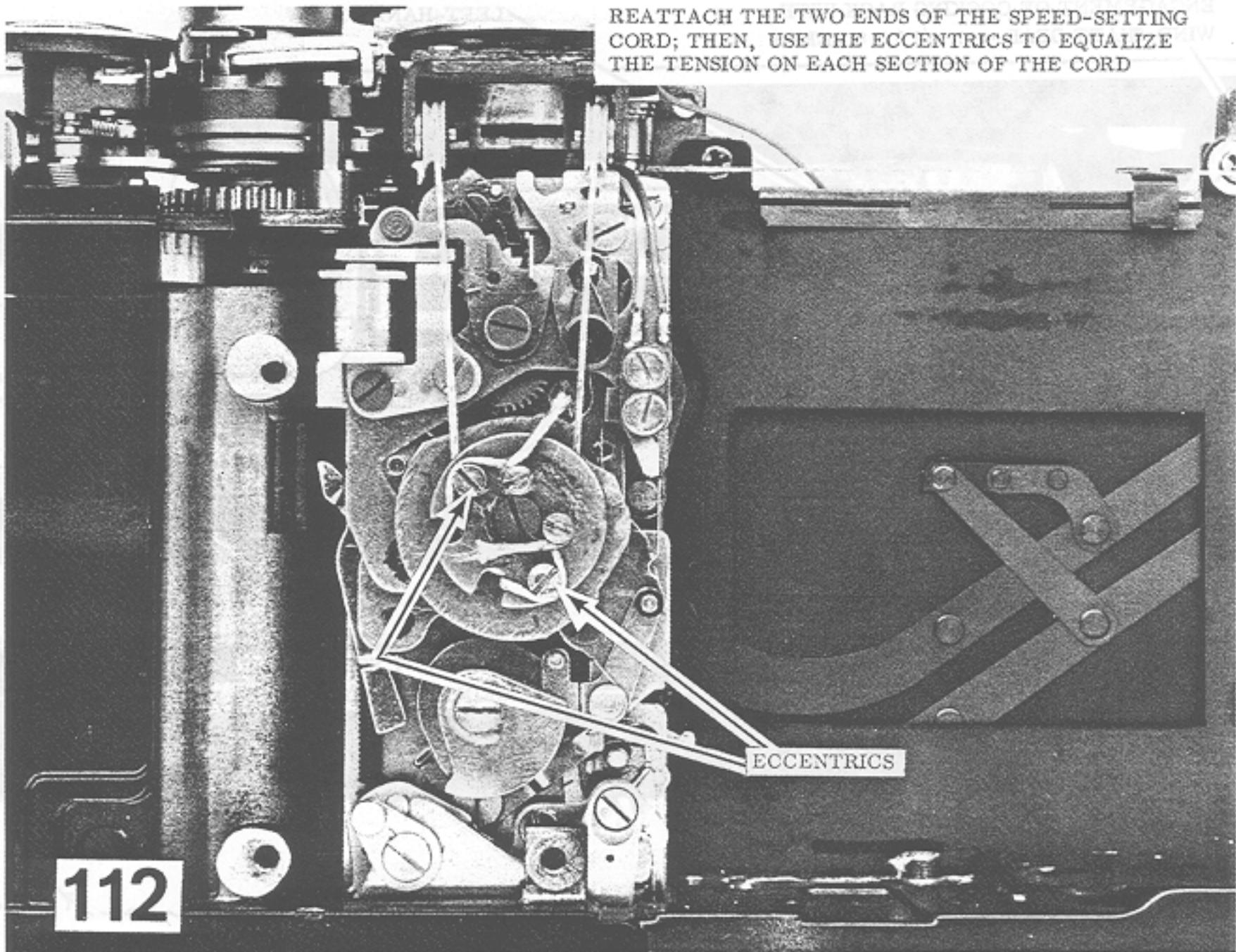


111

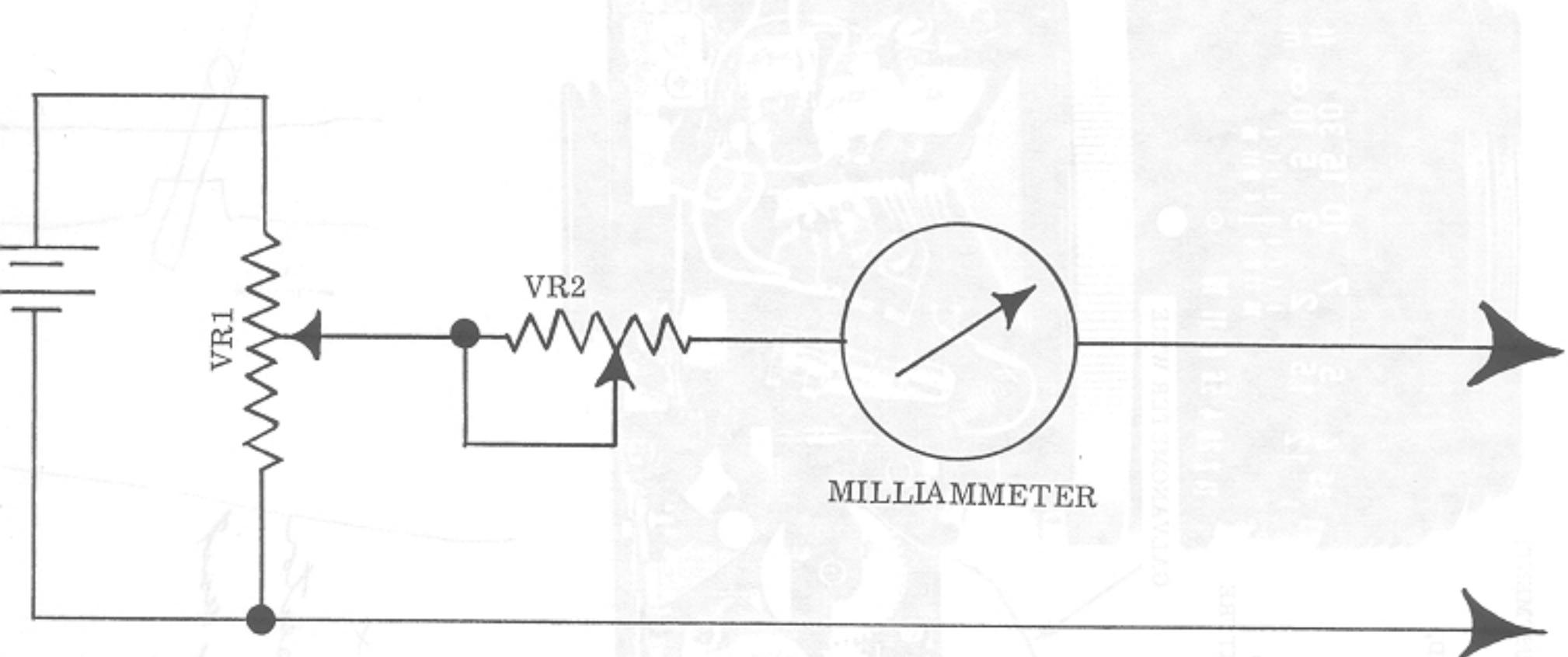
ADJUSTMENT SCREWS FOR
COCKING POST OF COCKING RACK

if shutter doesn't cock or advance won't come
back take off left hand screw, take off
gear + replace 180° makes ½ tooth adjustment

REATTACH THE TWO ENDS OF THE SPEED-SETTING CORD; THEN, USE THE ECCENTRICS TO EQUALIZE THE TENSION ON EACH SECTION OF THE CORD

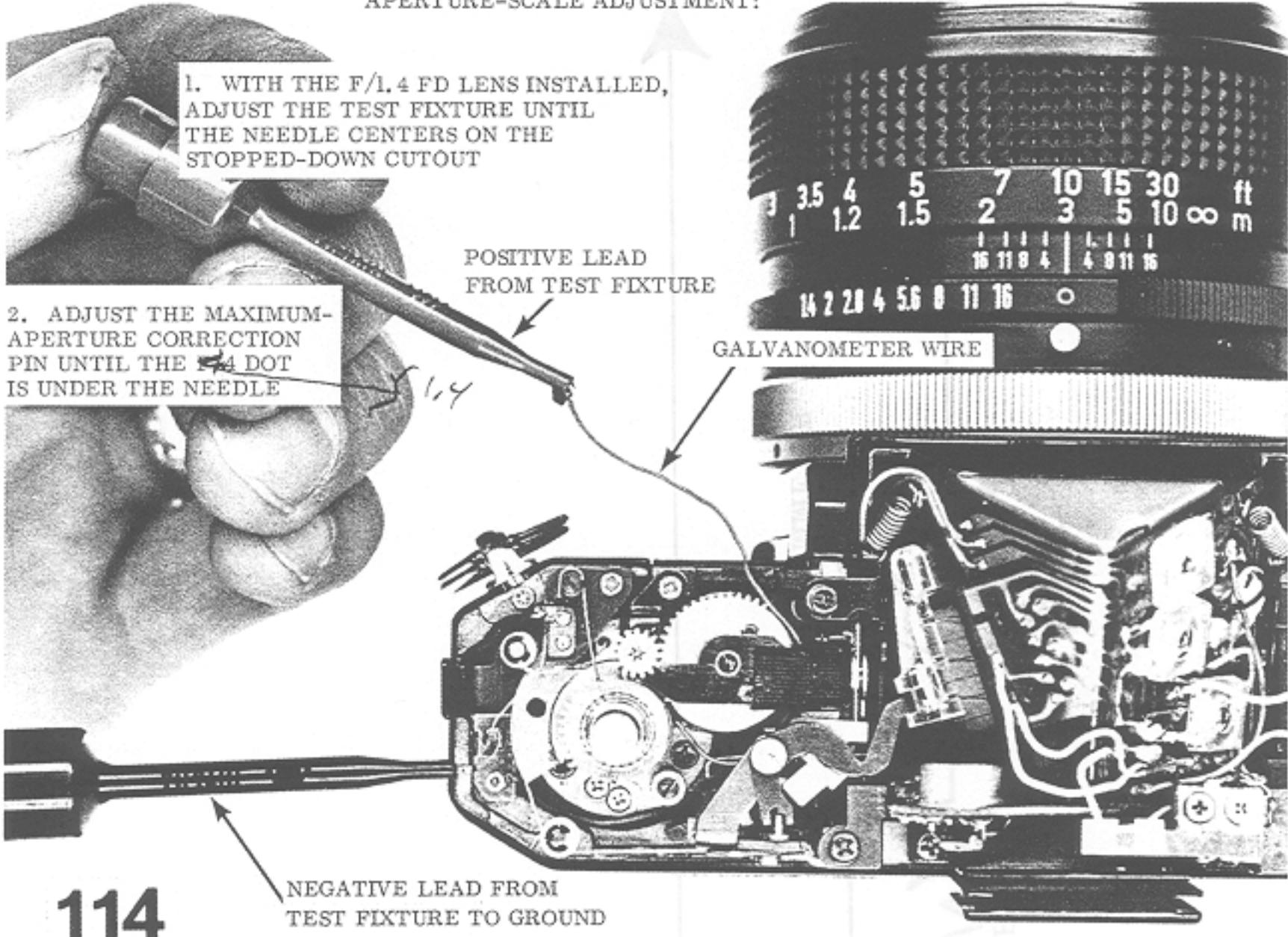


Set at End



113

APERTURE-SCALE ADJUSTMENT:



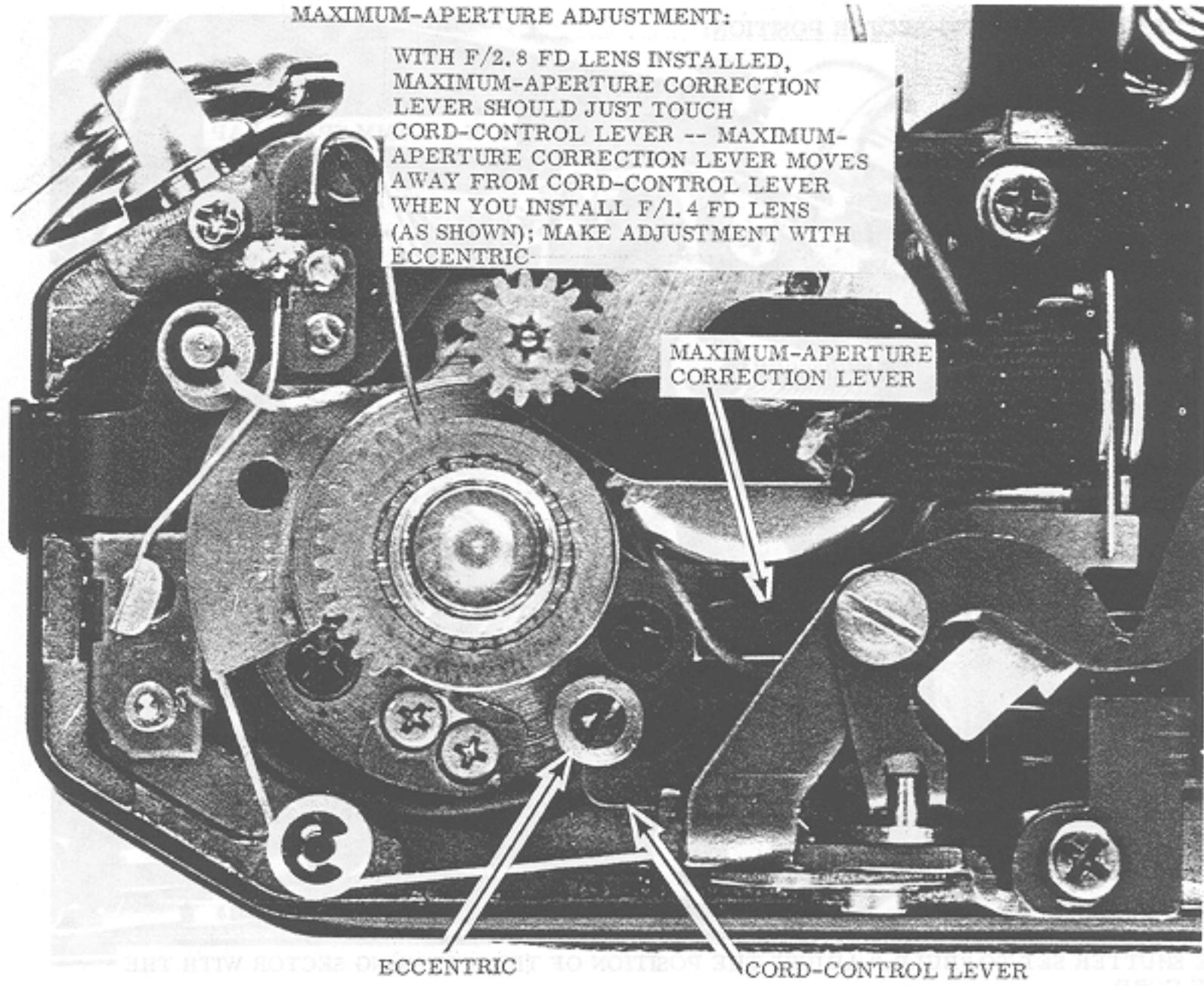
1. adjust aperture scale ↑
- (115) - 2. " maximum aperture ×
- (116) . 3 position of metering sector
- (117) . 7 Mount film speed gear unit
- (118) . 7
- (119) . 5 - Agfa meter
- (120) . 6 " Cds circuit
- (121) . 7 " Diaphragm opening



scale moves
down when
you turn pin
clockwise

MAXIMUM-APERTURE ADJUSTMENT:

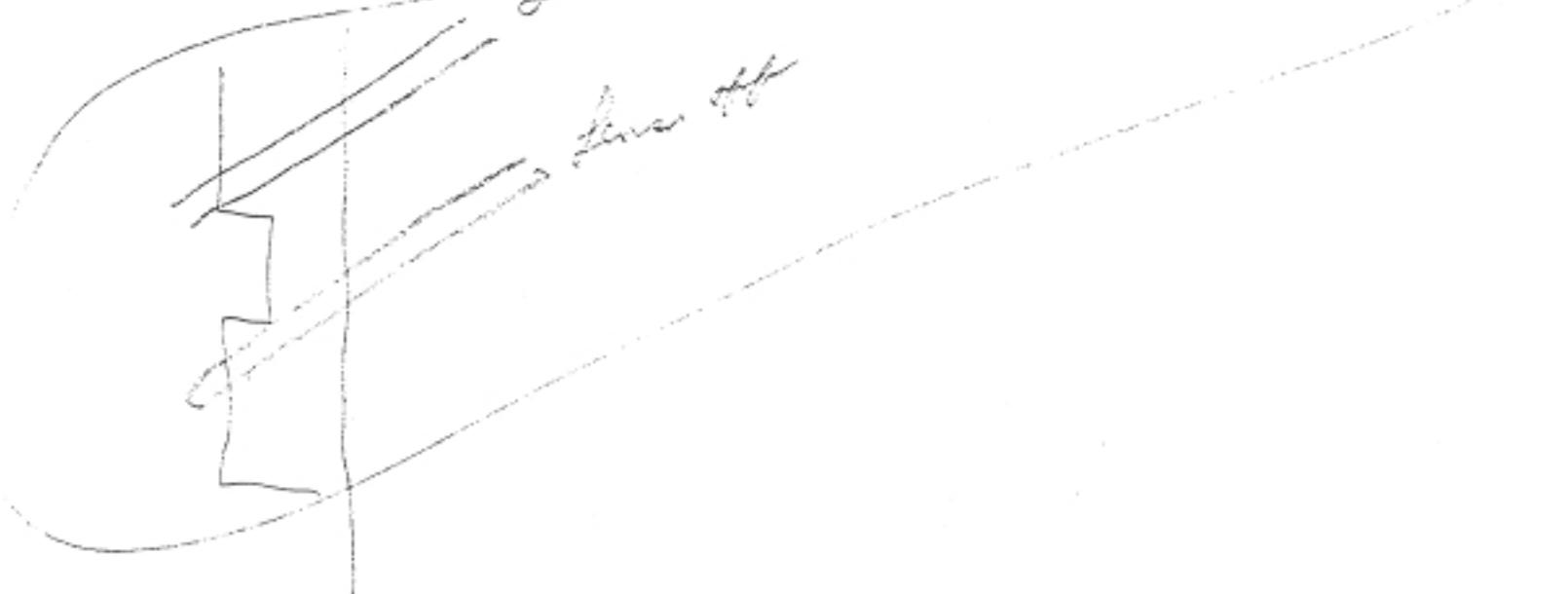
WITH F/2.8 FD LENS INSTALLED,
MAXIMUM-APERTURE CORRECTION
LEVER SHOULD JUST TOUCH
CORD-CONTROL LEVER -- MAXIMUM-
APERTURE CORRECTION LEVER MOVES
AWAY FROM CORD-CONTROL LEVER
WHEN YOU INSTALL F/1.4 FD LENS
(AS SHOWN); MAKE ADJUSTMENT WITH
ECCENTRIC



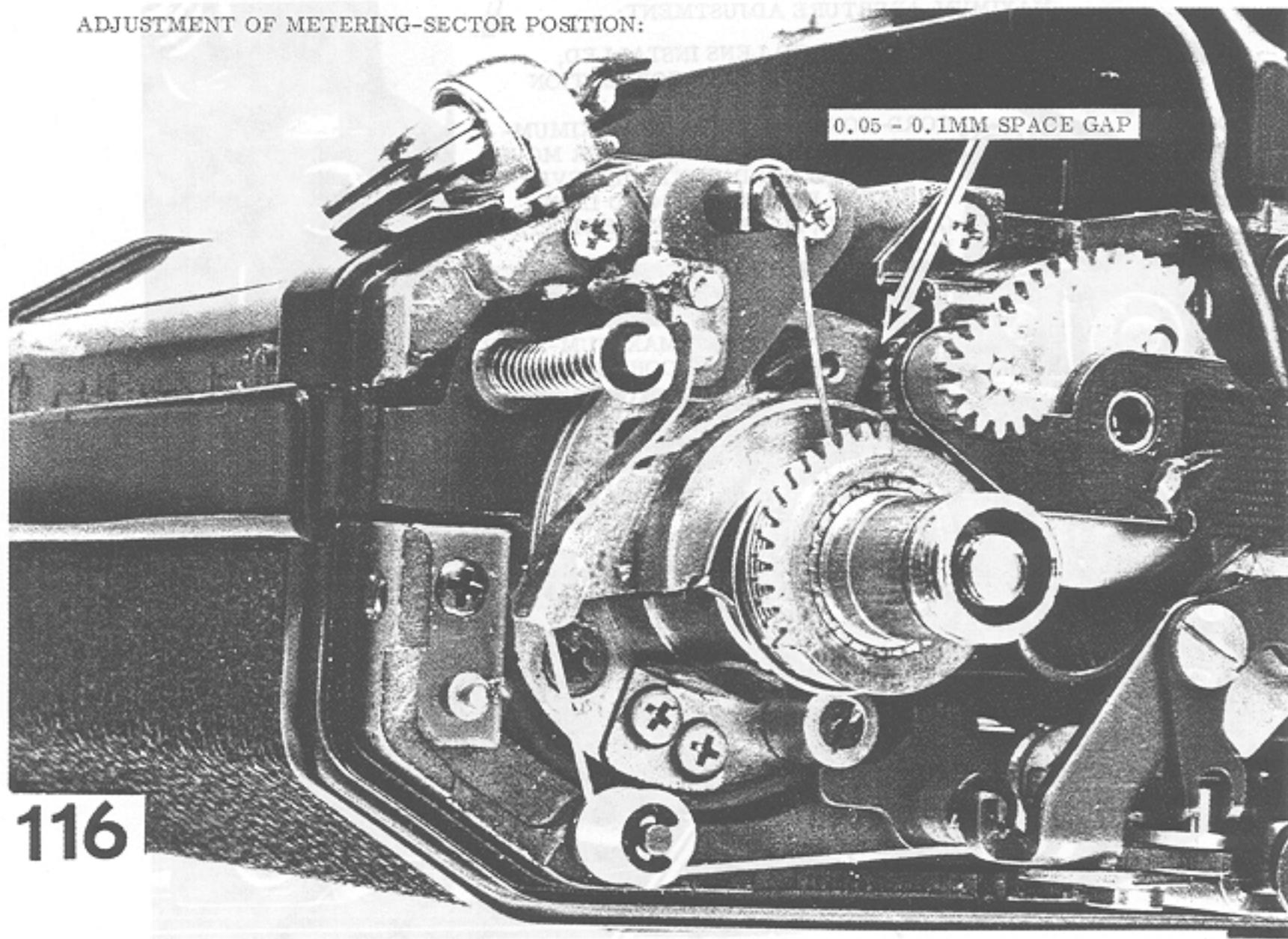
115

adjust maximum aperture & nothing happens

lens on but for 2.8 lens



ADJUSTMENT OF METERING-SECTOR POSITION:

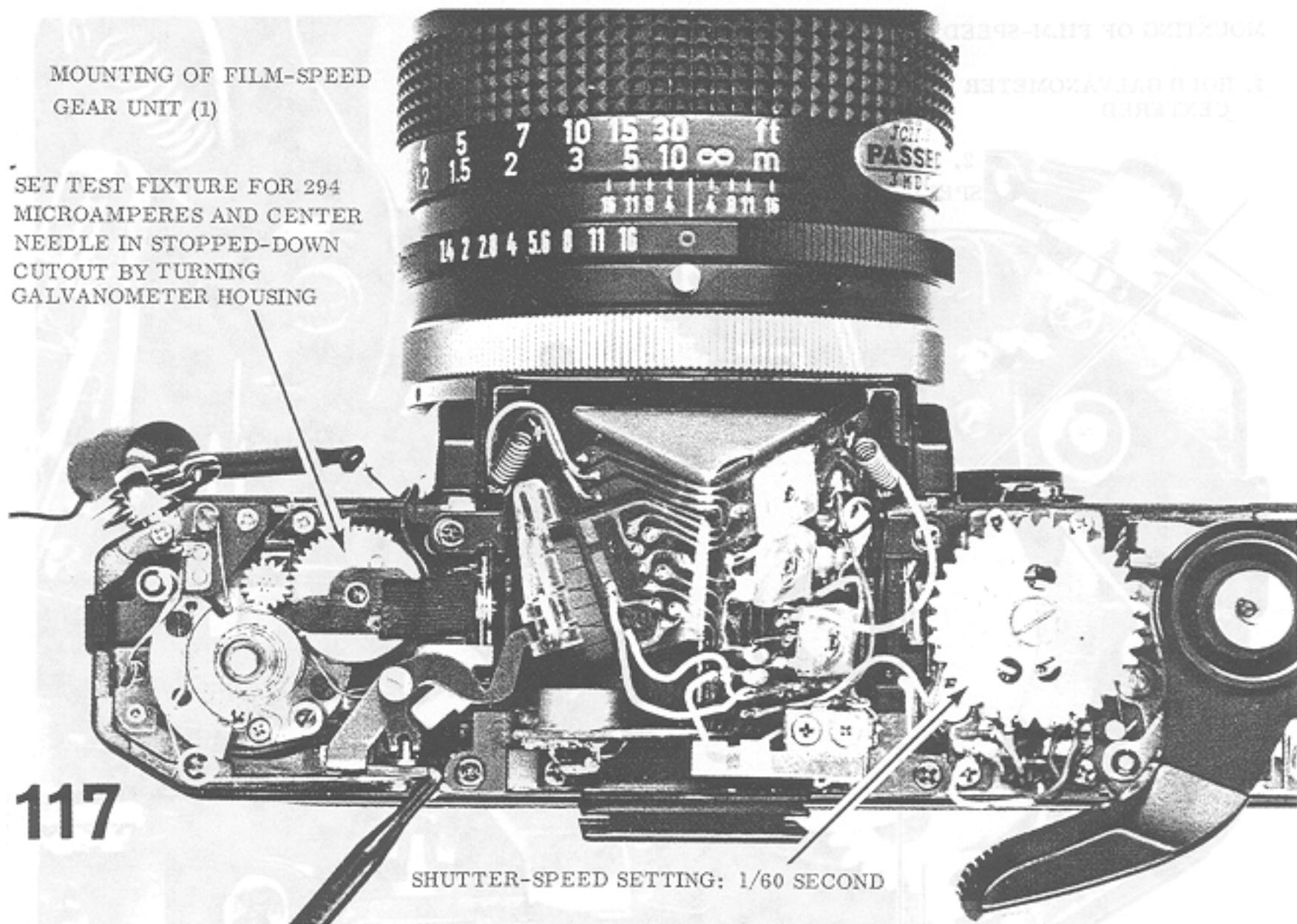


WITH THE SHUTTER SET TO "BULB," ADJUST THE POSITION OF THE METERING SECTOR WITH THE COUPLING CORD

adjust position of metering sector

MOUNTING OF FILM-SPEED
GEAR UNIT (1)

SET TEST FIXTURE FOR 294
MICROAMPERES AND CENTER
NEEDLE IN STOPPED-DOWN
CUTOUT BY TURNING
GALVANOMETER HOUSING

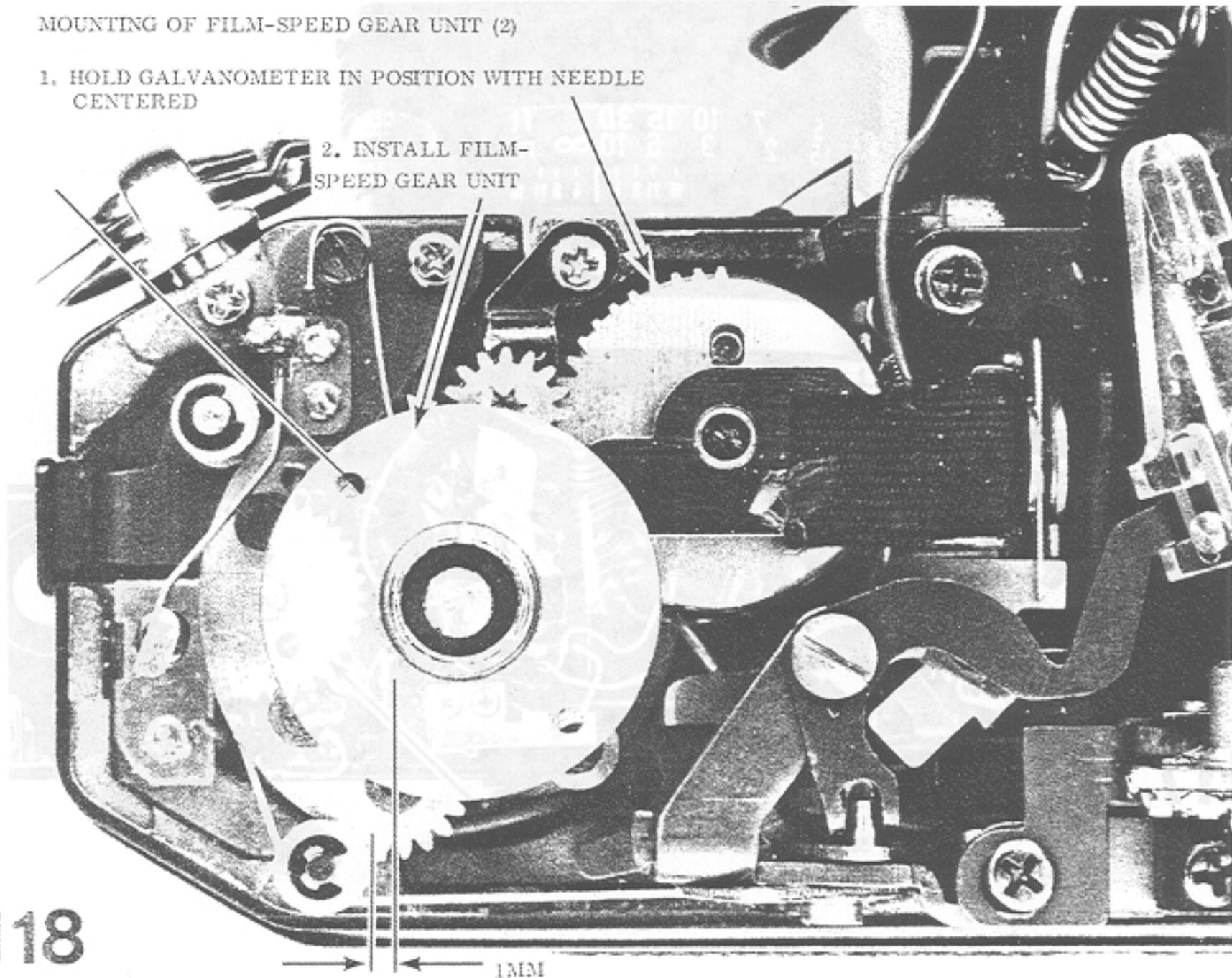


mount film speed gear unit

MOUNTING OF FILM-SPEED GEAR UNIT (2)

1. HOLD GALVANOMETER IN POSITION WITH NEEDLE CENTERED

2. INSTALL FILM-SPEED GEAR UNIT



118

Mount film speed gear unit

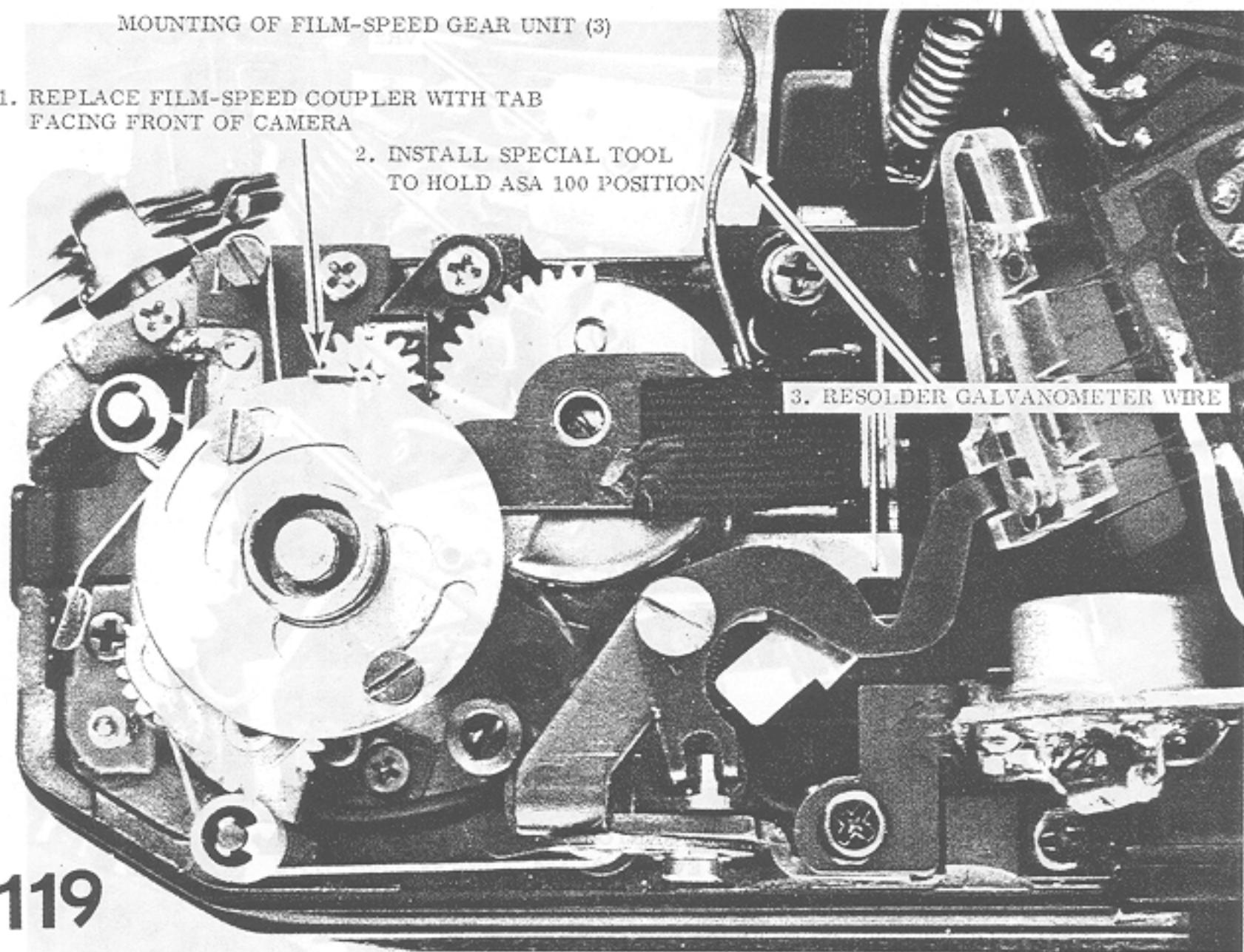
See drawing 118 + 1200
with this
12 30 sec

MOUNTING OF FILM-SPEED GEAR UNIT (3)

1. REPLACE FILM-SPEED COUPLER WITH TAB
FACING FRONT OF CAMERA

2. INSTALL SPECIAL TOOL
TO HOLD ASA 100 POSITION

3. RESOLDER GALVANOMETER WIRE

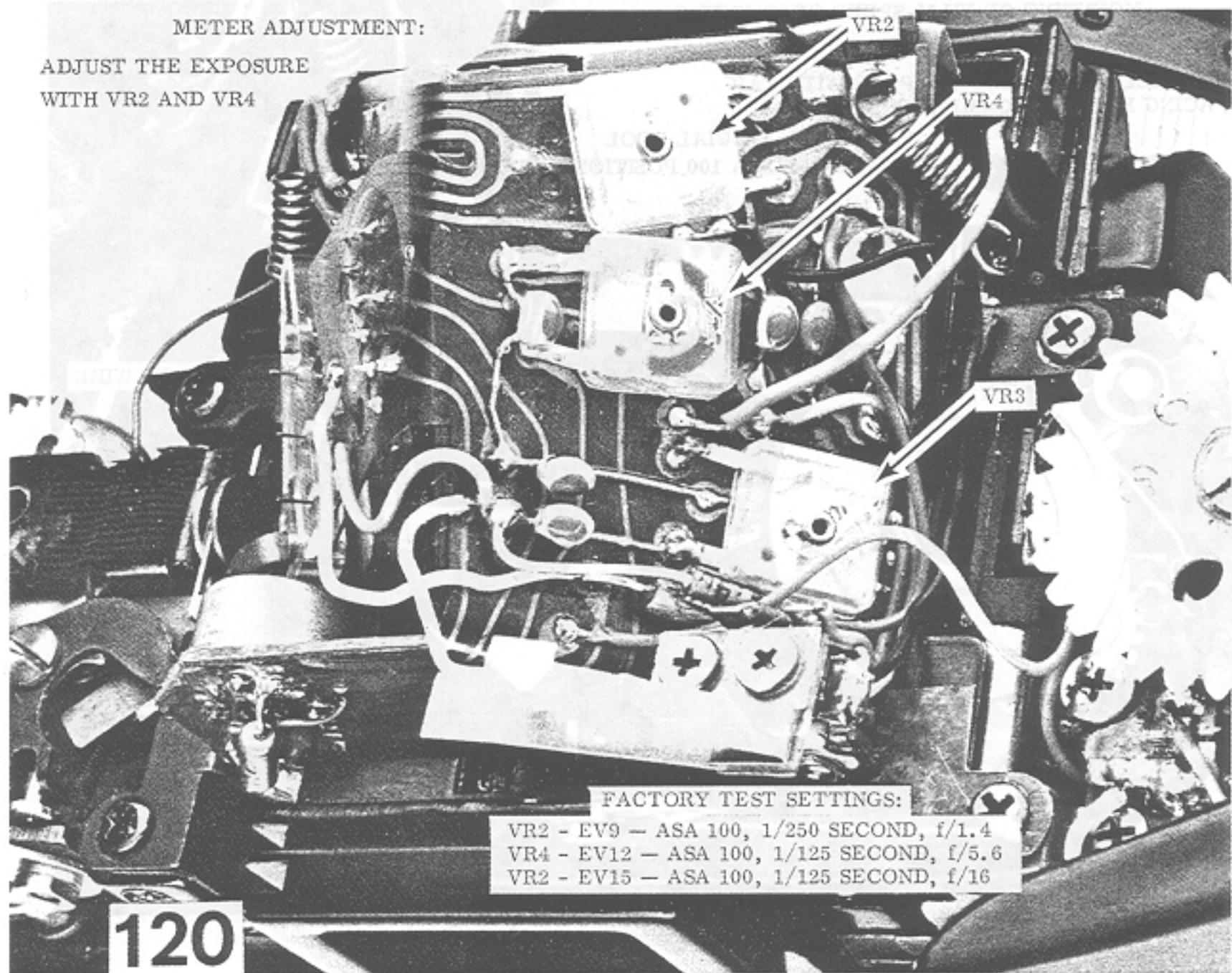


119

mount film speed gear with

METER ADJUSTMENT:

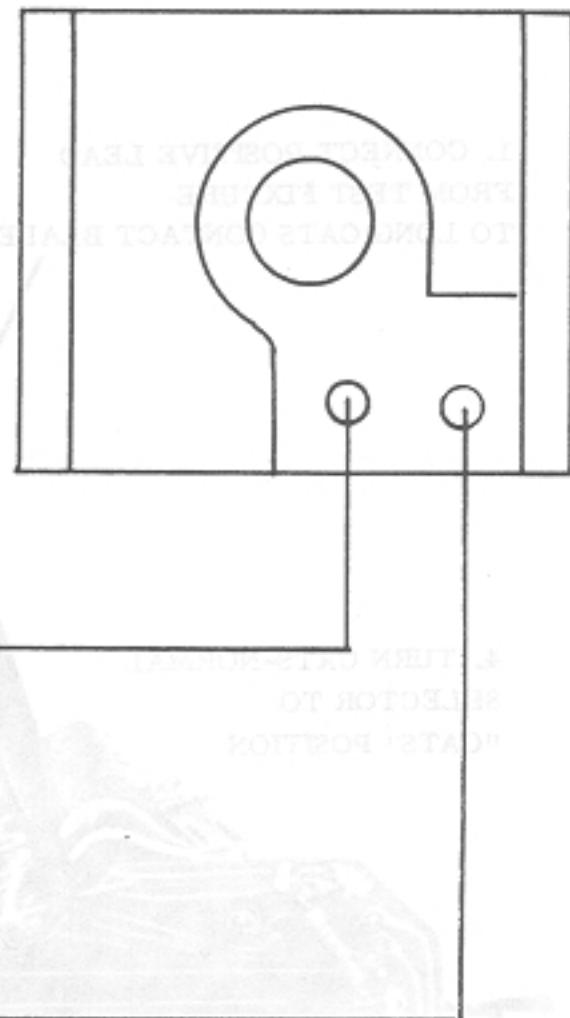
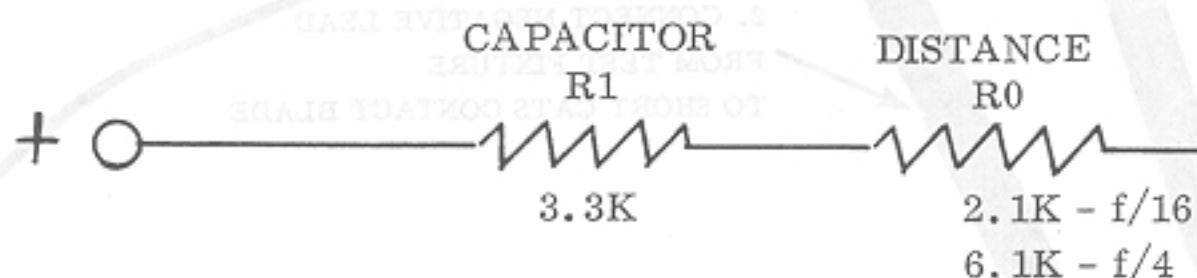
ADJUST THE EXPOSURE
WITH VR2 AND VR4



FACTORY TEST SETTINGS:

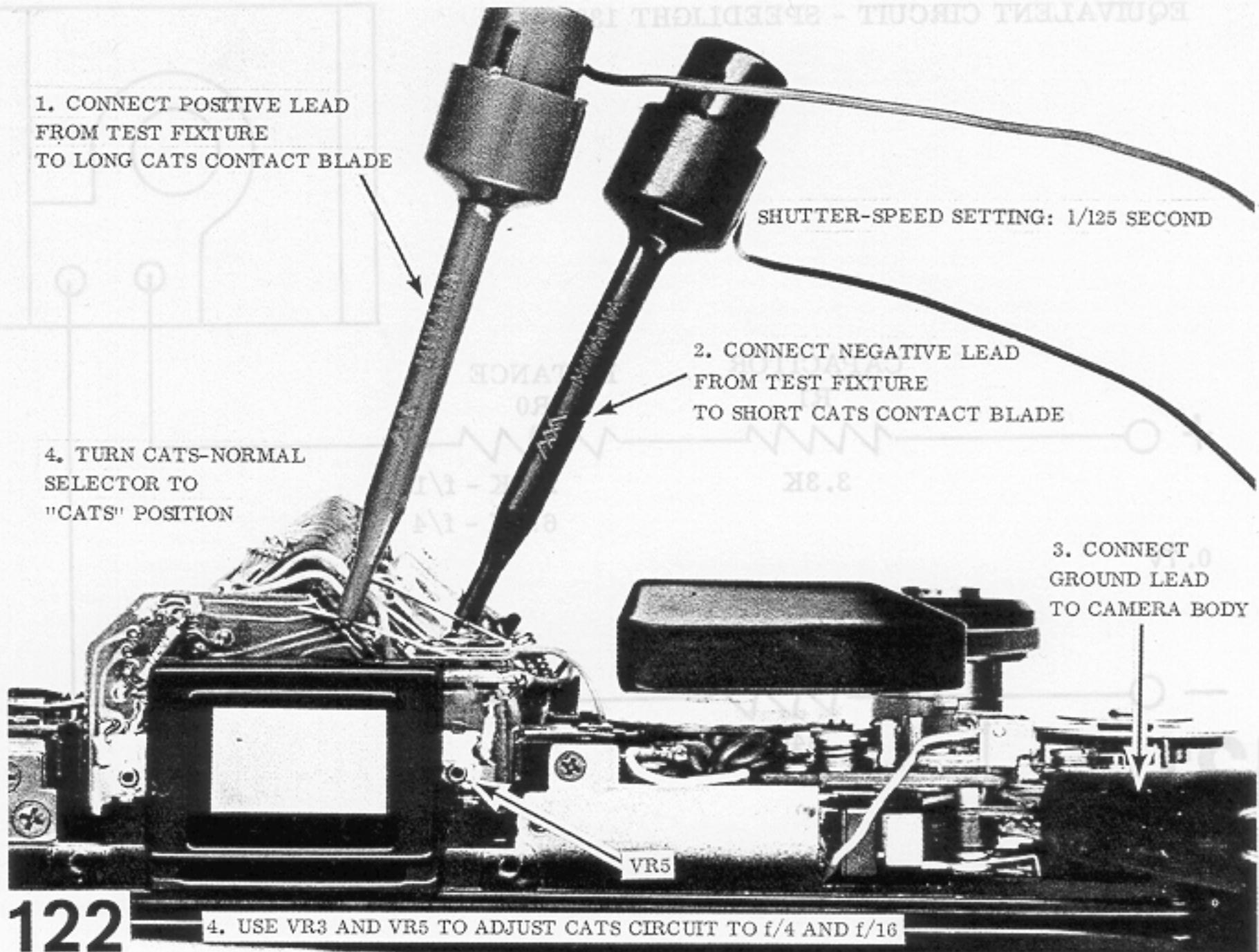
- VR2 - EV9 — ASA 100, 1/250 SECOND, f/1.4
- VR4 - EV12 — ASA 100, 1/125 SECOND, f/5.6
- VR2 - EV15 — ASA 100, 1/125 SECOND, f/16

EQUIVALENT CIRCUIT - SPEEDLIGHT 133D



121

122



122

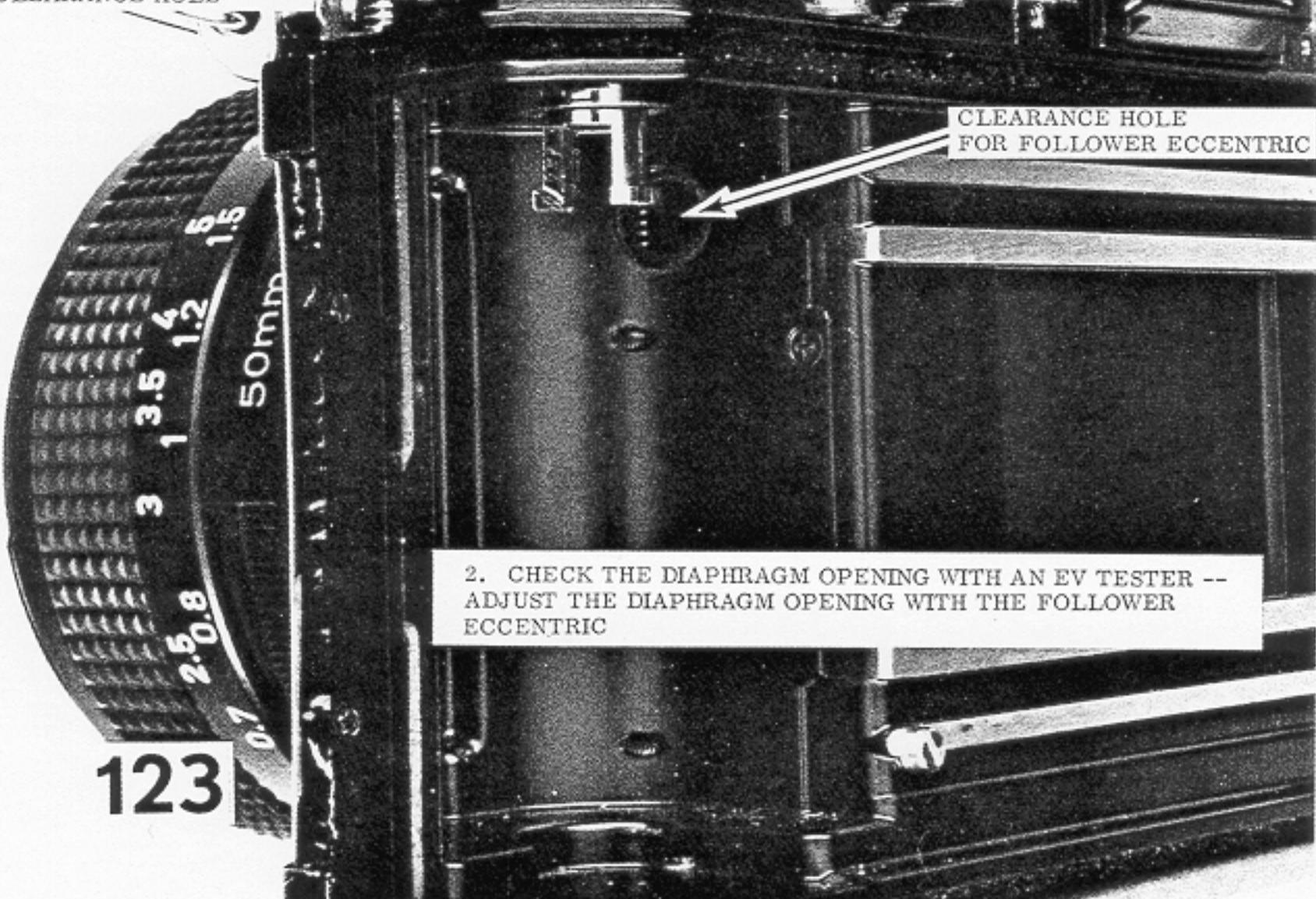
adjust cats circuit

VR3 - level adj +4

VR5 - slope adj +10

ADJUSTMENT OF DIAPHRAGM OPENING:

1. REMOVE THE CEMENTED COVER DISC OVER THE FOLLOWER-ECCENTRIC CLEARANCE HOLE



adjust diaphragm opening